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ABSTRACT

This publication analyzes the current status of the teaching profession in California, emphasizing what makes it attractive and satisfying or discouraging to teachers. Important trends in public attitudes about the teaching profession are explored, as well as teachers' perspectives on recruitment and retention. Among the serious problems noted were comparatively low salaries, uncertain job security, and public and media attacks on the profession. Also noted were school problems which affected teacher morale--student attitudes and behavior, shortened school days and years, and decreasing autonomy and advancement opportunities. Two conclusions are drawn: (1) Just holding still, or maintaining the profession's appeal at its current limited level, will require significant effort; and (2) Any real improvement in the attractiveness of the profession will require major efforts to redesign teachers' career patterns. Recommendations include: (1) higher salaries; (2) differential pay; (3) loans/fellowships; (4) more job security; (5) better public relations; (6) more supportive school environment; (7) tougher entry and renewal standards; (8) more flexible career ladders; (9) a master teachers corps; and (10) more teacher autonomy. A 16-page bibliography is included. (JD)

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IMPROVING THE ATTRACTIVENESS OF THE K-12 TEACHING PROFESSION IN CALIFORNIA

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IMPROVING THE ATTRACTIVENESS OF THE K-12 TEACHING PROFESSION IN CALIFORNIA

EXECUTIVE SUMMARY

This report addresses a widespread concern about the ability of our public schools to attract and retain talented teachers.

After gathering information and ideas from published books and articles, unpublished materials provided to us by researchers, and conversations with researchers, administrators, and teachers from various parts of California, we have come to the conclusions that are summarized below.

1. Recent Changes in the Teaching Environment Have Made Conditions Much Worse for Teachers

It is important to understand that teachers' concerns about their jobs fall into two categories: concerns about extrinsic factors (like salary, status, and security) and intrinsic factors (for example, love of the subject matter, growth, achievement, the enjoyment of working with children, and good adult relationships in the school). Research and teacher interviews indicate that, while extrinsic factors must be adequate for teachers to be satisfied with their jobs, the intrinsic factors are even more important motivators and are often ignored. Teachers need and want to feel competent and in control of their classrooms and their professional lives.

In recent years, a number of changes have made both extrinsic and intrinsic conditions worse for teachers. Salaries now are low compared to alternative professions, job security has been shaken by cutbacks, and public opinion and the media have put teachers on the defensive. Changes in students make teachers feel less confident, shortened school days and school years are limiting what can be accomplished, above-average class size has a negative effect on teacher morale, teachers have decreasing autonomy and no room for advancement within the profession, and some administrators do not seem to be addressing these problems creatively but are instead adding to them with a lack of support for teachers' authority.

In the next ten years, it is likely that California will face a teacher shortage across the board of the sort it now faces in mathematics, science, bilingual education, and special education. This general shortage, however, will not be caused by a lack of credentialed teachers, but rather by the fact that teaching is an unattractive career choice. Talented individuals who might well have become teachers will be deterred from doing so by the profession's problems.

In the past, when teaching had a more captive population of bright women, for whom few alternatives existed, school systems did not need to

worry much about ensuring an adequate supply of teachers or providing the kinds of salaries and environments that would attract and retain the best. Now in a society in which many more jobs are service-oriented, white-collar, and open to all races and both sexes, the teaching profession, the policy makers who provide for it, and the administrators who manage it need to reassess what is required to make teaching a competitive career.

2. Just Holding Still Will Require Significant Effort

Simply maintaining the teaching profession's current highly limited appeal will require significant effort. Doing so will necessitate changes in extrinsic conditions: higher salaries--for all teachers, or on a differential basis to handle shortages or reward merit--greater predictability about budgets, and a concerted effort to improve the public image of teachers. But even more importantly, teachers' intrinsic needs must be recognized in school-level attitudes and practices. It will be crucial to increase administrators' respect and support for teachers, to make sure in-service training is good and practical, and to create a more supportive work environment (by reducing class sizes, limiting classroom disruptions and paperwork, fostering adult interactions in the schools, and honoring outstanding teachers).

3. Any Real Improvement in the Attractiveness of the Profession Will Require Major Redesigning of the Teacher's Career Pattern

While the changes suggested above may seem substantial, they are only stop-gap measures. Significant improvement in the teaching profession's attractiveness will require fundamental changes in the profession itself to make it more of a profession. Standards for entry into the profession and renewal standards must be raised if teaching is to be a respected and attractive profession. The lack of a career ladder for teachers must be addressed--by creating a "master teacher" program, by allowing more flexibility in career patterns, and by recognizing that turnover is inevitable and making the best use of it. Teachers must be given more autonomy in their classrooms in return for better peer evaluation. And teacher education programs must not only become more challenging, they must be rethought to reflect these fundamental changes in the profession.

Improving the attractiveness of the profession and addressing teachers' concerns directly are important first steps to school reform because school reform depends on teacher support. Although legislators, school administrators, school board members, union officials, institutions of higher education, parents, the media and State agencies must all take an active part in needed changes because responsibility for the profession is dispersed, teacher support is essential. If teachers back reforms, those reforms will work; if their interests are elsewhere--in coping with daily problems, in fighting for control, or in hunting for a better job--the needed reforms will fail.

In summary, this report concludes (1) that if we are to solve the problems of the schools, we must first make the teaching profession more attractive and (2) that the best way to do so is to engage the teaching profession and address their concerns directly.

INTRODUCTION

In recent years, researchers and the media have drawn considerable attention to problems in the performance of our public schools. Both nationally and here in California, the public has seen dozens of articles, news stories, and documentaries describing test score declines, discipline problems, violence, drugs, teachers' strikes, and financial problems in the public schools. Two lines of inquiry have dominated the search for solutions to school problems--attempts to explain systematically what factors increase or decrease student test scores, and organizational analyses that try to explain what kinds of activity and leadership make schools effective.

A different focus, which we feel is profitable, looks at the schools from the teachers' perspective and asks what might improve their work. Recently national studies have argued that teaching does not generally attract people of high academic ability and that the situation is getting worse as other better-paying opportunities draw the brightest teachers and potential teachers away. With teacher shortages upon us in some fields and considerable turnover anticipated throughout the system in the near future, it is important to ask what can be done to ensure that California has the number and quality of teachers we will need in the next two decades.

This paper draws together existing research and information on the teaching profession, especially emphasizing what makes it attractive and satisfying or discouraging to teachers. Where possible, we will use California data or compare California to the available national findings. Section I describes important trends related to the teaching profession as the public sees them. Section II discusses, from the teachers' perspective, the long-term problems involved in recruiting and retaining the best teachers, and Section III presents our conclusions and a variety of solutions that have been suggested to address the teaching profession's problems. This report does not make specific recommendations for action, but rather argues that it is essential that we begin school reform by addressing the problems of the teaching profession first.

The information and ideas presented here were gathered from published books and articles, unpublished materials provided to us by researchers, and conversations with 82 researchers and administrators and 43 teachers from various parts of California. A list of those who have been helpful to our study is presented in Appendix 1.

I. RECENT TRENDS AFFECTING THE TEACHING PROFESSION: THE PUBLIC'S CONCERNS

Most people concerned about education are aware of three significant trends currently affecting the teaching profession nationally and in California:

- Public confidence in education is declining,
- There is growing concern about the qualifications of teachers, and
- Demand for teachers has begun to rise again.

Each of these trends is of significant concern to the public, but in combination they can provide us with some opportunities for improvement, if we use them well. Each one is discussed in turn below.

A. The Decline in Public Confidence

Although there are isolated instances to the contrary, results from most national opinion polls and surveys show that the public is losing confidence and respect in educational institutions, and the California (Field) Poll shows that citizens of this State have as little or less confidence in the public schools than the rest of the nation.

Figure 1 shows how national Gallup Poll respondents graded the schools' quality of work for the years 1974 through 1982. The percentage of respondents who gave the schools an "A" for performance declined from 18% in 1974 to 8% in 1982, while the grades "C" and "D" increased from 21% to 33% and 6% to 14%, respectively. The "Fail" grades remained unchanged at 5%. In the past two years, however, the proportion giving the schools an "A" or a "B" has increased slightly, while the percentage of people who expressed "no opinion" or "don't know" about school performance decreased from 20% to 11%, suggesting that the public is more aware of problems in the schools now than a decade ago. (Elam, 1978; Gallup, 1979-82) A 1982 Field Poll asking Californians about the job public schools are doing reported results similar to the Gallup Poll in Figure 1. (Field Institute, 1982)

Further evidence of this trend is shown in Figure 2, which summarizes responses to a different Gallup Poll question. Over the seven-year period, 1973-1980, a declining number of respondents had "a great deal" and "quite a lot" of confidence in schools, while the percentage expressing "very little" and "no" confidence increased significantly over the same period. (Gallup Opinion Index, various years)

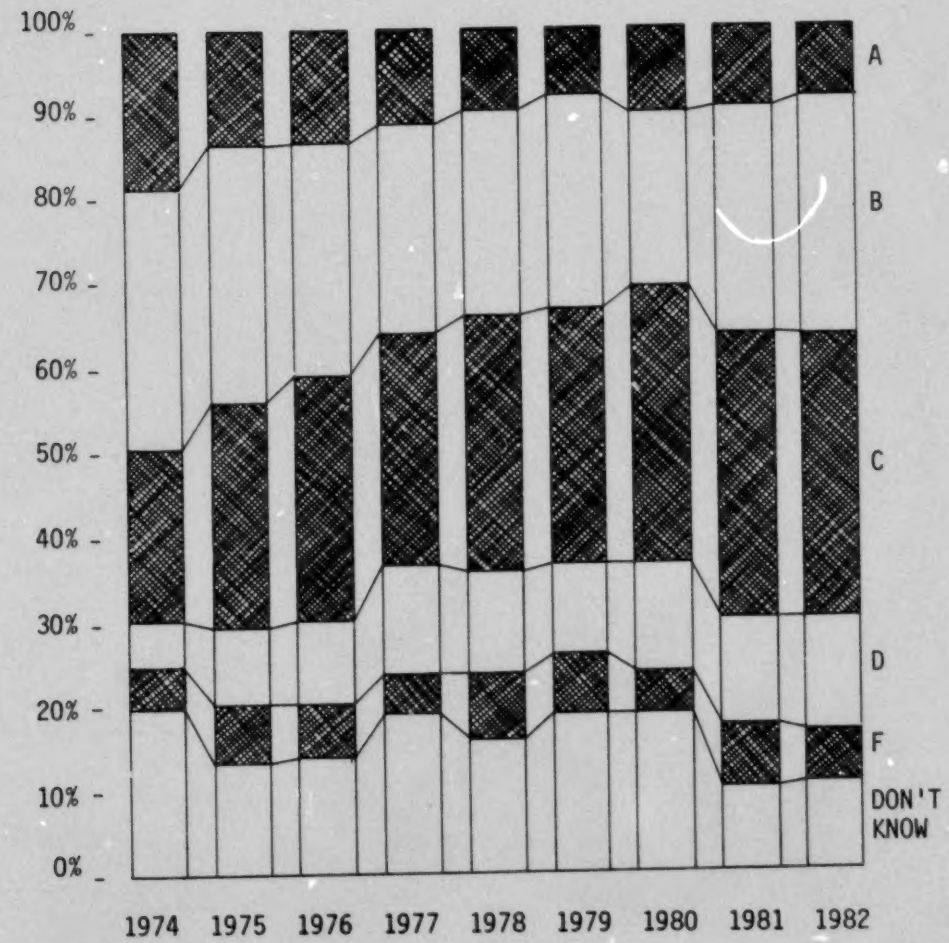
Not surprisingly, this loss of confidence also translates into negative financial support for the schools. The Gallup Poll indicates that respondents were more decidedly against raising taxes in 1981 than in 1969, as Table 1 shows.

Parents of children attending public schools, parents of children attending non-public schools, and adults with no children in school did not vary significantly on this question in 1981, the only year for which we have such information (58%, 57%, and 60%, respectively, opposed raising taxes).

The growing negative attitude towards schools also carries over to the public's view of the teaching profession. Respondents in 1981 who favored tax increases included among their reasons the argument that more money is needed to get better teachers, while, on the other side, a major argument used by those against tax increases was that teachers were not doing their job. (Gallup, 1981) In addition, when parents were asked in 1969 if they would like

Figure 1

Percentage of Respondents Who Graded the Public Schools
A, B, C, D, or F
1974-1982



Source: Elam, 1982; Gallup, 1979-1982.

Figure 2

Confidence in the Public Schools, 1973-80

Source: Gallup Opinion Index, 1973, 1977, 1979, 1980.

Table 1

Percent of Respondents Who Said They Would Vote For or Against Raising Taxes for the Local Public Schools

	Percent Who Favored Raising Taxes	Percent Opposed to Raising Taxes	Percent Who Responded "Don't Know"
1981	30	60	10
1972	36	56	8
1971	40	52	8
1970	37	56	7
1969	45	49	6

Source: Gallup, 1981.

to have a child of theirs take up teaching in the public schools as a career, only 15% said no; in 1980, 40% said no. (Gallup, 1980)

It is important, however, to understand that the decline in confidence in education in the last decade is part of a trend of growing disillusionment and cynicism towards institutions in general. In a national opinion poll, respondents expressed less confidence in thirteen different institutions in 1982 than they had in 1973. (National Opinion Research Center, 1982) For only two categories was the percentage who said they had "some" or "hardly any" confidence over 80% in 1973: organized labor (84%), and television (81%). By 1982, however, five categories reached the 80% level: organized labor (88%), Congress (87%), television (86%), the press (82%), and the Executive Branch (81%). The percentages for education were 63% in 1973 and 67% in 1982. The only categories that scored better were medicine and the scientific community, but all thirteen categories were over 50% by 1982. Considering the attention that public schools have received from the print and television media in recent years, and the amount of information readily accessible about education, especially data on failures, it may be remarkable that confidence in education has not decreased even more.

Californians are, however, more critical of the public school system than people in other parts of the country. From 1973 through 1981, five surveys conducted by the Field Institute showed that a progressively larger percentage of Californians, from 75% to 86%, had "some" or "not much" confidence in their public school system, ranking the schools near the bottom of all institutions. (See Table 2) (Field Institute, various years) However, the poll seems to confirm a general lack of confidence in many institutions.

Table 2

Percent of California Respondents Who Expressed "Some" or "Not Much" Confidence in the Indicated Institutions*

	Percent of Total				
	1973	1975	1977	1978	1981
The President			53	75	50
Medical profession	59	62			
Supreme Court	67		67		
Universities and colleges	70	71	61		
Organized religion and churches	73	68			
National Congress			78		
Manufacturing corporations		80			
Labor unions	81	80			
Insurance companies				81	
The public school system	75	84	80	81	86
Courts and the court system				83	

*Blank spaces indicate that the question was not asked that year.
Source: Field Institute, The California Poll, 1973, 1975, 1977, 1978, 1981.

There are, however, a few scattered signs that may be some cause for optimism. In 1975 a Gallup survey asked the public where they would like to see additional Federal funds spent if funds were available; public school education was the respondents' second priority after health care. In 1982, Gallup respondents chose public schools as their top priority. (Gallup, 1982) This is further confirmed by the Field Poll which showed that the percentage of Californians supporting increased government spending for public schools has grown from 43% in 1977 to 53% in 1982, as Table 3 shows. (The California Opinion Index, 1982)

Furthermore, the profession remains moderately prestigious in the community in spite of strong negative attitudes towards the public schools. A 1977 Louis Harris survey indicated that teachers ranked sixth among fifteen occupations believed to have great prestige. The teaching profession placed higher than bankers, journalists, and businessmen as well as others, but below scientists, doctors, ministers, lawyers, and engineers. (See Table 4)

Table 3

Percent of Respondents Who Said Government Spending for Local Public Schools Should Be Increased

May 1982	53
April 1981	48
September 1980	51
November 1979	49
July 1977	43

Source: California Opinion Index, August 1982.

Table 4

Percentage of Respondents Who Believe the Indicated Occupation Has Very Great Prestige

Scientist	67
Doctor	62
Minister	41
Lawyer	37
Engineer	34
Teacher	30
Athlete	27
Artist	21
Businessman	18
Entertainer	18
Politician	17
Journalist	17
Banker	17
Skilled Worker	15
Salesman	6

Source: Public Opinion (August/September 1981).

Finally, a 1979 Gallup Poll provides some advice for how to increase the public's respect for the schools. In answer to the question, "In your opinion, what are the main things a school has to do before it can earn an "A"?" respondents answered:

- Improve the quality of teachers (23%)
- Increase discipline (20%)
- Set higher standards (17%)
- Give students more individual attention (16%)
- Put more emphasis on the basics--the three R's (12%)
- Improve the management and direction of schools (7%)
- Establish closer relations with parents (6%)

Other suggestions with lower percentages included: update the curriculum, have smaller classes, eliminate drugs and alcohol, teach more life skills, and upgrade school facilities. (Gallup, 1979)

Clearly the public is concerned about the schools, and teacher quality figures importantly in their concern.

B. Concern About Teacher Qualifications

Education journals in recent years have provided strong evidence that nationally (1) the measurable academic qualifications of teachers have declined rather dramatically as the overall demand for teachers has declined; (2) those who consider education as a career are among the least qualified of all college students; (3) of those who prepare for teaching careers, the least able seem more likely to end up teaching; and (4) of those who teach, the least able stay in teaching while the more qualified leave. SAT, ACT, GRE, and National Longitudinal Study data all corroborate these trends. (Weaver, 1979; Vance and Schlecty, 1982a and 1982b; Perry, 1981) Moreover, the popular press has tarnished the image of teachers through numerous anecdotal accounts of teachers who are seemingly less qualified than the pupils they instruct. (See, for example, Time, June 16, 1980, or U.S. News and World Report, March 14, 1983.)

Other analysts of the national picture say that the scenario is getting even worse as changes in social attitudes open up more jobs for women college graduates in other professions, business, and technological fields. Although women used to dominate the numbers of public school teachers, particularly at the primary level, many women now are finding and will continue to find jobs in other industries instead. (Kerr, 1983; Sykes, 1981 and 1982; Atkin, 1981; Schlechty and Vance, 1982)

These systematic findings and informal observations have led educators to wonder how they can identify, recruit, select, and retain the most qualified teachers for service in the public schools. Though the community of university scholars has been able to demonstrate that the schools attract teachers who do poorly in school and on standard measures of academic

performance, they have been much less successful in identifying the attributes of good teachers--that is, those qualities of individual instructors that ensure higher educational achievement for their students. Research shows that almost no measurable attribute of teachers associates significantly with differences in student achievement. Higher teacher verbal ability generally associates with slight increases in both verbal and overall learning (Bowles and Levin, 1968; Hanushek, 1970), and enthusiasm seems to make a difference in student achievement. (Collins, 1976) But for the most part, educators and lay people alike find it nearly impossible to identify a good teacher by examining transcripts, test scores, sample teaching, and/or other attributes of potential teachers. (Ornstein and Levine, 1981; Gage, 1978; Rosenshine and Faust, 1971) It should be noted that education is not alone in this difficulty; research that tries to anticipate positive attributes in other professions has been similarly unproductive.

In summary, educational policy makers at the national level find themselves with a conundrum: the qualifications of teachers have seemingly declined, changes in the labor market could portend further declines, scholars who examine the teaching profession seem unable to identify the attributes of good teachers (leaving the schools at a handicap in their recruitment and selection efforts), and meanwhile public sentiment towards the schools has turned cold (and the economy colder) making it very difficult to find the additional resources needed to restructure the teaching profession into some more attractive form.

Though very little information speaks directly to trends in teacher ability in California, scholars seem to think that California closely follows, or perhaps even leads, the national trends. (Goodlad and Shulman in conversations, Fall 1982) The shrill alarm and accompanying policy debate that are fairly well documented at the national level are alive in California and have attracted public attention, but they have not generated much systematic analysis. Available data show mixed findings.

1. High-School Graduates Interested in Education

As high school graduates take the SAT exam, they indicate their area of academic interest from among various subject matter groups. California students who choose education as their primary interest consistently score well below the national and California averages for high-school-senior test takers. Their verbal scores typically lag thirty points below the national mean, and math scores are forty points below. Moreover, rankings of subject matter groups by test scores show that scores for those interested in education fall in the bottom three or four groups out of the possible thirty. Table 5 shows, however, that the situation is not getting worse, that the absolute scores for those interested in education have been stable in recent years.

Although these kinds of data receive a lot of attention in debates about teacher qualifications, their usefulness is actually quite limited. For example, we do not know how many of those who indicate an early interest in education at the time they take the SAT exam retain their interest after obtaining a bachelor's degree and go on to teacher preparation programs, nor do we know how many of those who indicate early interest in other subject areas choose teaching as a way to apply that subject matter. It is therefore very hard to draw any meaningful conclusions about teacher qualifications from these data.

2. Candidates in Teacher Preparation Programs

It is important to understand that the structure of teacher education in California differs from arrangements in most other states in one important regard: unlike forty-five other states which allow teachers to acquire certification through a four-year undergraduate major in education, California requires prospective teachers to take an undergraduate program other than education and a fifth year of professional training in education leading to a clear credential. Those who enter teacher training programs must meet higher minimum requirements than in other states, and most candidates are above the minimum standards.

A recent survey of California post-baccalaureate teacher-preparation programs shows that none routinely accepts students with GPA's under 2.5, and most also require a personal interview, letters of recommendation, a writing sample, and some work experience with children. These standards are considerably higher than those used in the nation as a whole, where 48% of the teacher preparation institutions have minimum entry GPA requirements under 2.0. (Barnes, 1982)

Though grades for admitted students are not available for all California institutions that grant credentials, CSU campuses report that GPA's for students entering credential programs exceed the mean undergraduate GPA at each campus, in most cases by three-tenths of one grade point or more. (Barnes, 1982) These figures are especially important because they demonstrate that, far from scraping the bottom of the barrel, California institutions attract and admit students whose undergraduate performance is above average.

Table 5

Average SAT Scores

		1978	1979	1980	1981	1982
National mean--all high school seniors	verbal	429	427	424	424	426
	math	468	467	466	466	466
California mean--all high school seniors	verbal	427	428	424	426	425
	math	466	473	472	475	474
California high school seniors interested in education	verbal	400	399	395	397	399
	math	423	427	422	424	424
Ranking of education scores among 30 subject groups	verbal	26	26	27	27	27
	math	26	27	27	27	28

Source: College Entrance Examination Board, 1978-82.

3. Teacher Education

Teacher qualifications are affected not only by the calibre of students entering the profession but also by the effectiveness of teacher training. Both the California State University and the University of California have in recent years reviewed their schools of education, and both have made changes in their offerings as a result. (UC, 1976; CSU, 1982) Those studies together with recent research and our conversations with teachers have provided us with a view of teacher education programs from the profession's perspective, a view that raises some interesting concerns like the following:

- Very little money is invested in teacher training programs, less, in fact, per student than in educating a typical third-grader. (Peseau and Orr, 1980; Schwartz, 1982; Kerr, 1983)

- Program curricula are, in many institutions, not difficult or interesting enough to attract or challenge top-notch students. (Kerr, 1983)

- In order to keep enrollments up, some programs have lowered admissions standards; this means that the experience is less stimulating for the best students. (Watts, 1980; Sykes, 1981)

- The faculty, when they are rewarded for the quality of their research rather than for their teaching, are not always good role models for new teachers. One could reasonably expect the faculties of schools of education to be leaders both in educational research and in pedagogical technique, and indeed some are, but the pedagogical techniques used by many faculty unfortunately do not foster an interest in creativity and new pedagogical ideas. (Smith, 1982; Howsam, 1980)

- There are few links forged between pedagogical research and actual practice, leaving students to conclude either that such research is irrelevant and programs ought to be more applied, or that too much time is spent on minimally useful practical skills with little theoretical underpinning. (Howsam, 1980; Smith, 1982; Travers, 1980; NEA, 1982a)

- Programs are designed to be self-contained, with little recognition that they are but one part of a new teacher's learning experience, which will extend through the first several years of his or her induction into the profession. (Sykes, 1982; Kleine and Wisniewski, 1981; Houston and Felder, 1982)

- And finally, teacher training programs do not give students a realistic set of expectations about the career they are entering and do not teach them the coping skills that teachers, buffeted by multiple vested interests and societal changes, must acquire if they are to remain successful. (Elsworth and Coulter, 1978; Schwartz et al., 1983)

Making changes that respond to these criticisms is difficult, however, because the determination of the content of teacher education programs is very decentralized. The Commission on Teacher Credentialing (CTC)* oversees the content and process of teacher education programs and requires that each institution's curriculum address each of twenty-seven generally-stated teacher competencies. However, each institution develops its own operational definitions and instruments to measure those competencies for each teacher candidate.

Like many other elements of the teaching profession, responsibility for teacher education is dispersed, opinions are many, and no one group, not even CTC, can induce changes alone.

4. Teacher Proficiency Examinations and Credentials

Another process that has an impact on teacher qualifications is credentialing. Students who graduate from accredited California institutions with a bachelor's degree or higher that is not in education, and who have completed a teacher preparation program, are eligible for a one-year preliminary credential which is renewable for up to four years if other specific requirements are met. When candidates successfully complete post-baccalaureate fifth-year teacher education programs, the institutions training them certify to the Commission on Teacher Credentialing that the candidate has a bachelor's degree in a field other than education from an institution approved by the Commission and has mastered all of the required competencies. The Commission, in turn, grants each candidate a "clear credential," indicating that he or she has completed all necessary preparation.

There are two basic kinds of teaching credentials: multiple-subject and single-subject. A multiple-subject credential allows a teacher to teach all subjects in grades K-8; a single-subject credential specifies a particular subject matter group--like social sciences--and allows the teacher to offer any course within that category, usually in the secondary grades. Once they acquire a basic teaching credential, teachers can go on to add additional subjects or new credentials in specialties, administration, or other service areas.

This year, CTC has begun to require prospective teachers and administrators, and previously-credentialed teachers who want to change subject areas to pass a proficiency test that measures skills in reading, writing, and mathematics. This test was added to credentialing requirements following some recent disconcerting evidence about teachers' basic skills. For example, in 1978 the Los Angeles school district tested its teachers for basic English proficiency and 13% failed. (Christian Science Monitor, January 10, 1983) These results and others were particularly disturbing because they came at the same time that the State was implementing mandatory minimum proficiency tests for high school graduation, and the public began to ask how we could expect students to pass such tests if their teachers could not. In response, then Assemblyman Gary Hart sponsored a bill requiring minimum competencies for teachers.

*Prior to 1983, this Commission was known as the Commission for Teacher Preparation and Licensing (CTPL).

A test was developed by the State Department of Education and was administered by CTC for the first time in December 1982. Of the nearly 7,000 teacher candidates who took the test, 62% passed all three sections; however, only 29% of Black and Hispanic candidates passed all three sections. (CTC, 1983a) Those who are analyzing these first exam results have cautioned the public not to draw hasty conclusions because those taking the first test may well not be representative of the State's teachers and teacher candidates and, therefore, may not be an indication of the competence of the existing teaching staff. In addition, the disparity among ethnic groups is a potential issue for the future. At the present time, the results are receiving wide publicity and have stirred considerable comment.

Another hotly debated issue in California is the period validity for teacher credentials and provisions for their renewal. At the present time any teacher who has held a clear credential for two years as a full-time teacher can, by applying, have that credential issued for life, with no additional requirements for renewal. Those who are concerned about teacher qualifications and about the need for teachers to continue to grow and change have been pressing for changes in the credentialing laws that will require periodic renewal of credentials based on continued experience in active teaching and additional coursework. Those who argue against this change believe that teachers take steps now to stay up to date and that voluntary renewal processes are preferable to enforced ones. This is an issue that the Legislature will undoubtedly continue to address in coming sessions.

Finally, one other credentialing issue is generating concern--the growing number of emergency credentials being issued. The Commission on Teacher Credentialing is allowed by law to issue emergency credentials to persons who do not meet all of the regular credentialing requirements if a local school board declares the situation to be an emergency. Between 1978-79 and 1980-81, emergency credentials for teachers other than substitutes rose in number from 1,273 to 3,402, a 167% increase. (CTPL, 1981a) This was primarily due to a need for special education teachers because of new certification requirements and expanded programs, but shortages in math, science, and bilingual education have been met this way as well. What is of concern is that local administrators to whom we spoke indicated that budgetary retrenchment and reassignments are causing more and more teachers to teach outside their credential areas on an "emergency" basis--in other words, that some school districts are choosing to retain currently employed teachers by reassigning them to shortage areas in which they have little or no subject matter training, rather than laying them off and hiring others with subject matter background. Although there are no good data about the number of teachers in California teaching outside their subject areas, there is cause for concern.

5. On-the-Job Evaluations of Teachers

One way to keep watch over the quality of teaching is through periodic formal evaluation. Indeed, evaluation is a first critical step toward improvement, on the one hand, or dismissal on the other; all the actions that follow are dependent on good, serious, initial evaluations. The California School Board Association, recognizing this, has recently published guidelines to assist in the assessment of teaching. (CSBA, 1983) However, as evaluation is presently done in California, it has very little impact on the quality of teachers.

The evaluation of teachers involves an interesting combination of state laws, court rulings, and local practices. State law (the Stull Act) considers the first three years of a teacher's career within a district as a probationary period. As such, school administrators treat new teachers somewhat, but not very, differently from tenured teachers (i.e., those with more than three years of service within a district). The major difference is the frequency of evaluations: new teachers receive at least two formal evaluations each year; tenured teachers receive as few as one every other year.

With regard to disciplinary procedures and possible dismissal, the courts have ruled that all teachers with renewable contracts have roughly the same rights to procedural due process, and, in practice, assessments of teacher qualifications and possible corrective measures are not very different for probationary teachers than for tenured teachers. Formal hearings about incompetence are very infrequent; administrators seem usually to handle such problems through informal means.

Performance evaluations have no bearing on remuneration, which depends exclusively on years of experience and level of education. Each additional year of experience results in higher salaries, up to a certain level when the scale levels off.

Performance evaluations also have little bearing on job security, which depends primarily on seniority. Unions have asserted the principle of seniority, and the courts have upheld the argument that security is a function of years of service within functional categories. That is, if a district needs to reduce its workforce within its English department, it must lay off the least experienced teacher first.

At present, the evaluation system in California seems more appropriate for a group that is traditionally considered labor than for a profession. Of course, formal evaluation is only one way to assess and improve performance, and it may not be the best way. As it is now, however, it adds very little information to our understanding of teacher quality in California.

6. Conclusions About Teacher Qualifications in California

Any overview of the preparation and qualifications of California's public school teachers should include two perspectives--process and outcome. The data about the process of becoming a teacher in California are much more complete than those that measure the outcomes of that process. In other words, we know more about how individuals become teachers than we do about teacher competence or effectiveness.

Examination of the process of becoming a teacher reveals more good news than bad. The bad news is that individuals entering college who are attracted to careers in education are among the least qualified academically (as measured by SAT scores of high school seniors). The good news is that virtually all teacher candidates complete a bachelor's degree in a disciplinary major other than education, most with above average grades, and many obtain advanced degrees. At the primary level, more than 28% have master's degrees or greater; at the secondary level, nearly half do. (CBEDS*,

*CBEDS is the State Department of Education's California Basic Educational Data System.

1981-82). Also, although competency-based training programs are controversial, California teacher education programs emphasize twenty-seven specified competencies, and new teachers are subject to at least two formal evaluations per year.

A look at the outcomes of teacher preparation, on the other hand, has proved to be very difficult and discouraging. The only available data on this subject are the initial results of the new teacher proficiency test which are not encouraging, but that test does not have a proved relationship to teacher performance and may not be representative of the total teacher population. In addition to the negligible data about the teaching profession, California lacks systematic data about other college graduates or other occupations that would permit comparisons.

In sum, we have not seen the kind of longitudinal or cross-professional studies necessary to come to secure conclusions about teacher qualifications in California. The most we can say is that, compared to teachers in other states, and despite some criticisms of teacher education programs that deserve serious attention, California's teachers appear to have above-average preparation; we are not able to say anything definite about performance.

7. A Caveat About Teacher Productivity

It is important, as we make judgments about California's teachers to remember that their performance is affected not only by their personal qualifications and the strength of their preparation but also by constraints imposed upon them by legislation and policy. In recent years considerable evidence has accumulated to argue that instructional time constraints are a problem in California and that they may quite possibly have an adverse effect on student performance.

Recent research has found that "time on task" is especially important to student achievement. A study of middle and lower-middle achieving California students in second and fifth grades measured both the time teachers allocated to academic subjects and the time students actually spent engaged in specific learning activities. Correlations of allocated and engaged time with measures of educational outcomes showed that both allocated time and engaged time are positively associated with student learning. Also, teachers who allocated more time to academic subjects generated a higher proportion of engaged time for their students. (Denham and Lieberman, 1980) In this context, the following points seem especially important:

- California's school year is three days shorter than the average for other states.
- California's school day is 32 minutes shorter than the average for other states.
- The combination of shorter days and years implies that, over the course of a twelve-year public school education, California students receive fifteen months less education than students in other states--the equivalent of graduating at Thanksgiving of the eleventh grade.

- In addition, California students have fewer opportunities to attend summer school. (Anton, 1981)

Clearly, California students are not being given the opportunity to spend the amount of "time on task" that other students can.

Of course, time on task is not the only factor that affects student performance. It is obvious that teachers' abilities also have an effect on student learning (e.g., by determining the difficulty of the lesson, the appeal of its content, the clarity and enthusiasm of the presentation). And it is also obvious the performance is not a matter just of time on task but of time on useful tasks. But the quantity of time spent on learning is also important, and California's below-average investment in learning time is an important element to consider as we assess the state of the teaching profession.

C. The Increasing Demand for Teachers

At the same time that concern is growing over the qualifications of teachers and the school system's ability to retain them, California is about to enter two decades in which a significant number of new positions will be available for teachers. In the past ten years, with the passing of the baby boom and layoffs following Proposition 13, demand for teachers has in general been limited. Now, however, demand is again increasing in California and the increase in positions may provide us with some opportunities to address issues related to teachers.

It is important to differentiate between long-term growth in demand and immediate shortages. These are discussed separately below.

1. Growth in Demand in the Next Decade

a. Demand Projections

There are four major variables that determine the number of openings that become available for teachers (demand). These are: enrollment, retirements, resignations, and pupil-teacher ratios. Each is discussed in turn below. Specific calculations are presented in Appendix 2.

(1) Enrollments

The State Department of Finance annually projects enrollment in California schools. Their most recent projections of public school enrollment (Table 6) show an increase in enrollments in grades K-8 of 834,000 students between 1983 and 1991. Enrollment in grades 9-12 will decline slightly over the same period, but will begin to grow again in 1990.

While there are no enrollment projections available beyond 1991, population projections through the year 2000 are available and indicate that not only high school enrollments but also enrollments in elementary school will continue to increase through most of the 1990's. (U.S. Census Bureau, 1982) If these projections hold true and pupil-teacher ratios remain the same, the growth in enrollment will create a need for 45,000 teachers in the next ten years.

(2) Retirement

In addition to this need caused by growth, California will need to replace teachers who retire.

Near-term data on retirements are available for California from the State Teachers' Retirement System (STRS). STRS has projected teacher retirements for K-12 and the community colleges through 1984-85 (Table 7). The projected K-14 retirements from 1980 to 1985 are expected to increase to a level of approximately 6,000 teachers per year.

Table 6

Projected Enrollments (Headcount)
in California Public Schools for
Grades K-8 and 9-12, 1982-1991

Year	Grades K-8	Grades 9-12	Total
1982	2,746,386	1,221,326	3,967,712
1983	2,759,801	1,217,838	3,977,639
1984	2,785,559	1,228,094	4,013,653
1985	2,845,738	1,232,796	4,078,534
1986	2,945,897	1,209,481	4,155,378
1987	3,069,804	1,168,467	4,238,271
1988	3,199,288	1,129,365	4,328,653
1989	3,337,382	1,107,881	4,445,263
1990	3,464,486	1,122,875	4,587,361
1991	3,580,576	1,161,447	4,742,023
Difference Between 1982 and 1991	834,190	(59,879)	774,311

Source: State Department of Finance, Population Research Unit, Public School Enrollment Projections, September 1982.

Table 7

K-14 Teacher Retirements Through 1984

Year	Number of Retirements
1980-81	4,831
1981-82	5,082
1982-83	5,423
1983-84	5,743
1984-85	5,926

Source: State Teachers Retirement System (STRS)

In addition to the STRS estimate, data on the age distribution of teachers (Table 8) may be used to gauge the magnitude of K-12 teacher retirements over the long term. (There is a myth that the average age of teachers in California is quite high, perhaps as much as 55; it is actually, according to CBEDS data, just 42, although it undoubtedly varies widely by district.)

If we assume an average retirement age of 60, retirements alone will create the need to replace at least 41,000 of California's teachers as they retire over the next ten years.

(3) Resignations

No statewide data on annual teacher turnover for reasons other than retirement are available. However, data collected by the National Center for Education Statistics in recent years point to a national turnover rate for both retirements and resignations of somewhere between 6 and 8%. (NCES, 1979 and forthcoming) If we assume this also applies to California, and STRS seems to believe it does, we can project in the next ten years approximately 108,000 to 144,000 separations, including retirement.

The resignation rate is, of course, sensitive to economic conditions. In a tight labor market it tends to be low due to the reduced prospects of reemployment. But given that caveat, it appears that resignations will produce between 67,000 and 104,000 vacancies in the next ten years.

(4) Pupil-Teacher Ratios

The analysis to this point has assumed that pupil-teacher ratios would remain the same as at present. They may, of course, not be constant.

Between 1965 and 1975, pupil-teacher ratios in California fell. The decrease went from 32.4 to 26.1 in K-8, and from 18.1 to 17.9 in 9-12. (CSU, 1982a) This downward movement reflected a number of

Table 8

Age Distribution of California Teachers, 1981-82

Age Group	Percent of Teachers in Age Group
21-34	28.4
35-44	32.8
45-54	25.7
55 and over	13.1
TOTAL	100.0

Source: State Department of Education (SDOE), 1982e.

factors, including an improved level of public support for the schools, and the greater availability of teachers from 1967 on (the preceding period had been one of teacher shortages). Comparable ratio data are not available for several years thereafter. We do know, however, that by 1980, pupil-teacher ratios in California had turned up as a result of the fiscal pressures created by Proposition 13. Hence, in 1980 the K-3 ratio was 27.7, the 4-8 ratio was 26.6, and the 9-12 ratio was 20.6. (Kirst, 1982) As Kirst points out, California now has the second largest pupil-teacher ratio in the country.

If pupil-teacher ratios were reduced to the present national average of 18.4, it would produce a need for an additional 56,000 teachers in the next ten years. If it were raised to 30, it would reduce the need for teachers by 43,000. Pupil-teacher ratios might increase or decrease because of direct decisions to change them or because of new programs mandated or old ones eliminated by the Federal Government or the State.

(5) Summary of Demand

Enrollment growth, retirements, and resignations should create a significant demand for teachers at the K-8 level during the 1980's and 1990's. At the 9-12 level enrollment growth will not be a strong factor until the 1990's, although some demand will arise from the need to replace retiring and separated teachers. In total, we estimate the need in the next ten years as shown in Table 9.

If the pupil-teacher ratio were reduced to 18.4 (the national average), demand for teachers would increase to 198,000 to 246,000; if the pupil-teacher ratio increases to 30, demand would decrease to 110,000 to 147,000.

b. Conjecture About Teacher Supply

This 110,000 to 246,000 positions presents a significant opportunity for the introduction of new people into the teacher workforce. Although nationally there is growing concern about a teacher shortage, it is hard to argue confidently one way or the other here in California.

Table 9

Estimated Demand for Teachers
1982-1991

	At 6% Total Separations	At 8% Total Separations
Due to growth	45,000	45,000
Due to retirement	41,000	41,000
Due to resignations	67,000	104,000
Total at current pupil-teacher ratio	153,000	190,000

Only two years' data are available for California indicating the number of teacher candidates receiving their first credential. The Commission on Teacher Credentialing issued 14,897 first teaching credentials in 1978-79 and 15,448 first credentials in 1979-80. This makes it probable, as Table 10 shows, that if pupil-teacher ratios remain the same, enough people are being trained in California and are migrating to California to meet the annual demand we project for the next ten years.

Several important caveats must be considered, however. On the one hand, during the early years of growth, demand may be constrained by requirements to rehire teachers who were laid off during the late 1970's. The schools have a contractual obligation to offer employment to these individuals first. Although one can only speculate about the proportion of positions that will be filled from this pool, it is obvious that, as growth continues, the percent of positions filled by teachers who were formerly laid off is likely to diminish.

On the other hand, real supply may be considerably less than the CTC figures indicate because many people acquire credentials as a kind of insurance and never teach. In addition, unlike the 1950's, it may be difficult to attract people with credentials back into the teaching force because many have found more satisfying alternative occupations. We can infer especially from the much greater percentage of women employed today that considerably more of the non-teaching credential holders are presently employed and would not choose to return to teaching.

We, therefore, have to conclude that within the next decade there may well be more teaching jobs than people willing to fill them. The shortage will not, however, be caused by a lack of credentialed teachers, but rather by the fact that the teaching profession is less attractive than other available alternatives.

Table 10

Estimate of Teacher Supply Compared to Annual Demand

	Pupil-Teacher Ratios		
	at 18.4	at 23.6	at 30.0
Average Annual Demand			
At 8% separation	24,600	19,000	14,700
At 6% separation	19,800	15,300	11,000

Annual Supply (First Credentials)	
1978-79	14,897
1979-80	15,448

Source: CTPL, 1981a.

2. The Problem Of Immediate Teacher Shortages

Although it is difficult to make judgments about long-term general teacher shortages, it is clear that California now faces some immediate teacher shortages in bilingual education, in mathematics and science, and perhaps in special education.

a. Bilingual Education

California law requires that a bilingual teacher must be provided wherever the number of limited English proficient (LEP) children at a particular K-6 grade level equals or exceeds ten. While the law does not require bilingual classrooms at the upper grade levels, it does require that older children of limited English proficiency receive some specialized instruction. Hence, there is a demand either for bilingual teachers or teachers of English as a second language at the upper grade levels also, although it is less definable.

The Supply and Demand for Bilingual Teachers Report (SDOE, 1983) projects a need for 16,600 to 19,400 bilingual teachers at the K-12 level in 1983-84. At the present time there are 6,497 teachers with bilingual crosscultural authorization employed in the schools, and 1,300 to 1,500 more are expected to complete bilingual emphasis credentials or certificates of competence this year. There is, therefore, a shortage of 8,600 to 11,600 bilingual teachers projected in 1983-84. The number needed is more than double the existing number of bilingual teachers, and in view of the increasing proportion of language minorities in California schools, the need for bilingual teachers is likely to grow for some time to come.

b. Mathematics and Science

Mathematics and science shortages, unlike those discussed above, spring from a different and more problematic source.

There is considerable evidence that a shortage of mathematics and science teachers exists and is growing. Data on emergency credentials are again instructive:

- In 1980-81, CTPL reported issuing 170 emergency credentials in mathematics, 27 in the life sciences, and 15 in the physical sciences. (CTPL, 1981a)

- A survey of eight California school districts (Los Angeles, Oakland, Long Beach, San Jose, Garden Grove, San Francisco, Modesto, San Diego) indicated that in fall 1981 these districts together employed 164 individuals on full-time emergency credentials in mathematics, and 247 individuals on limited assignment emergency credentials; in the sciences, they employed 56 individuals on full-time emergency credentials and 35 on limited assignment credentials. That is to say, 500 individuals were employed under some type of emergency credential in mathematics or sciences. (Kirst, 1982)

- The Los Angeles Unified School District reports that this year that district alone is employing 500 individuals on emergency math credentials. Of these, about 100 are limited assignment credentials. In the sciences, there are an estimated 50-100 persons on emergency credentials. Attrition is expected to create a need for an additional 75-100 mathematics teachers in fall 1983.

The scarcity of mathematics teachers, unlike the other shortages, is directly related to the fact that salaries in industry for people with skills in mathematics far exceed what can be earned in teaching. As reported by Guthrie and Zusman, the average beginning teacher salary in San Francisco Bay Area schools is $12,680. An individual with a bachelor's degree in mathematics or science, and a fifth year of training (a California teaching credential requires a fifth year) can earn a salary of $20,000 at Hewlett-Packard or Lockheed. A master's degree in a technical field can command as much as $5,000 to 10,000 more. (Guthrie and Zusman, 1982a)

What causes consternation for the future is the fact that enrollment in single-subject (secondary) mathematics and science teacher preparation programs are extremely low. There were only 97 individuals enrolled in single-subject mathematics programs across the UC and CSU systems in 1981-82, and only 174 enrolled in single-subject science programs. (Guthrie and Zusman, 1982a) Thus, the emerging shortage may mushroom to crisis proportions in the not too distant future.

Consider, in this connection, that there are approximately 20,000 mathematics and science teachers in California. Estimating retirements at 1.9% of those employed would generate a replacement need of 380 teachers annually. (Guthrie and Zusman, 1982a) And an estimate of 4-6% resignations would add another 800 to 1,200 open positions per year, and that assumes that math and science teachers are choosing to leave at the average rate. Thus, we can compare a demand of 1,180 to 1,580 positions per year to a supply of about 300 new teachers.

In addition, both UC and CSU have recently changed their undergraduate admission requirements to require more college preparatory course work in mathematics and English and increases in requirements for all high school graduates are being widely discussed by State and local school boards. The CSU requirement, which becomes effective in fall 1984, will be two years of mathematics and four of English; the UC requirement, effective in fall 1986, will be three years of mathematics and four of English. As a result, at a time of growing shortage, there may be a significant increase in the need for mathematics teachers at the secondary level.

c. Special Education

Both Federal and State laws mandate and support an appropriate public education for handicapped children. These mandates, which arose in the 1970's, have created a need for special education teachers which has yet to be completely met. Emergency credentials provide one indicator of

the unmet need. The Commission on Teacher Credentialing issued 712 emergency special education credentials in 1978-79 and 2,160 in 1980-81. Most of these authorized the teaching of learning handicapped or severely handicapped children. (CTPL, 1981a) Unlike bilingual education, however, declining support for special education at the Federal and State levels and efforts to redefine who qualifies as a handicapped student may mean that supply and demand will be in balance within the next year or two.

d. English

There is also some evidence of an emerging shortage of English teachers. CTPL in 1980-81 issued 157 emergency credentials in this subject field. (CTPL, 1981a) This may also be related to or exacerbated by the change in admission requirements in California's public universities.

It is clear that if changes do not occur, shortages in these fields will become even more critical in the near future. For these reasons alone, it is important to consider policy changes. However, changes should not be made without considering how they might interact with longer-term, more complicated problems in the teaching profession. The section that follows discusses those longer-term problems.

II. PROBLEMS IN THE RECRUITMENT AND RETENTION OF GOOD TEACHERS: THE TEACHERS' PERSPECTIVE

Teachers are attracted to their profession for a great variety of reasons, which may be divided into two categories: altruistic motives (the desire to be of service and, more specifically, to work with young people) and what might be termed more "practical" rewards (a decent salary, job security, time off in the summer, and for some, the prospect of upward social mobility). Once established in the profession, teachers' willingness to continue teaching depends in part on the continuing adequacy of these practical rewards, but more importantly on two specific elements of their experience as teachers: a regularly confirmed sense of their own competence, and a sense of being in control, both of their classroom and of their professional life. Thus, the characteristics of teaching that attract individuals to the profession are not quite the same as the qualities that hold them, although there is some overlap, particularly on issues such as salary and job security.

Frederick Herzberg has developed a theory known as "motivation-hygiene," which we believe is useful in understanding the rewards to which teachers respond. His theory is that factors tied to work content, including achievement, intrinsic interest in the work, and growth, contribute positively to job satisfaction, while extrinsic factors, such as salary, status, security, company policy, and interpersonal relationships contribute, not to job satisfaction but to job dissatisfaction if they are not adequate. He argues that meeting extrinsic needs is necessary but not sufficient for high and sustained job satisfaction. (Herzberg, Mausner, and Snyderman, 1959) This theory fits well with what we have discovered in recent research about teachers and conversations with them.

In recent years, a number of changes in public education have made both intrinsic and extrinsic conditions less attractive for teachers. Salaries have not kept pace with inflation, job security has all but evaporated in the face of declining enrollments and budget cuts, public respect for teachers has declined, student attitudes toward learning have changed, and increasing numbers of Federal, State, and locally-mandated special programs have diminished the teacher's autonomy and sense of competency in the classroom. These changes pose problems primarily in retaining teachers, but to the extent that they become well-publicized characteristics of the teaching profession, they will also inhibit the recruitment of new teachers.

A. Why Teachers Are Attracted to the Profession

Studies of teachers have shown consistently that the strongest motivation for undertaking a teaching career is the desire to work with young people. In surveys done by the National Education Association in 1971, 1976, and 1981, about 70% of teachers named this as one of the three most important reasons for becoming a teacher--by far the most commonly cited reason. Between 35% and 44% mentioned an interest in a particular subject-matter

field, and 34% to 40%, the significance of education in society; the proportion of teachers citing these two reasons increased from 1971 to 1981. Job security and long summer vacations were mentioned much less frequently; only about 20% cited them as one of their three most important reasons in 1981. (NEA, 1982c; Ornstein and Levine, 1981)

The findings of Daniel Lortie's influential study, Schoolteacher, are quite similar to those above. (Lortie, 1975) According to his research, an interest in working with young people and a desire to render service are the most widespread motives for teaching. Other reasons include: individuals' own positive experiences in school, which encourage them to seek a career in education; interest in a particular subject; the teacher's schedule, which permits those who are parents to be home when children are home from school and allows an extended summer break; and the job security traditionally associated with teaching.

Lortie also points out that the structure of the teaching profession itself has helped attract individuals, because it is a relatively easy profession to enter; in addition, individuals who decide to become teachers after working at some other career can readily enter the profession, and those who stop working for a time can re-enter without difficulty (assuming, of course, that jobs are available). This ease of entry and re-entry stands in marked contrast to most other professions, in which substantial postgraduate training is required and advancement is difficult unless one remains continuously employed.

Even salary, which is often cited as the greatest deterrent to teacher recruitment, is still high enough to be an attraction in some cases, according to Lortie. For individuals from low-income backgrounds, teaching may represent upward mobility; and, among those occupations traditionally considered "acceptable" for women, teaching is among the most highly paid. (Lortie, 1975; See also Sykes, 1983; Schlecty and Vance 1982; Hange, 1982)

The teachers to whom we talked during the course of this study confirmed these findings. They invariably mentioned working with young people both as the reason they became teachers and as the major reason that they continue to work as teachers. An interest in a particular subject matter, or in education in general, was also frequently mentioned. A high school chemistry teacher, for example, remarked that he had considered both teaching and working as a chemist in industry; teaching struck him as much more interesting, and, at that time, the starting salary differential was small. An English teacher mentioned a love of literature; another one pointed out that, as an English major who wanted to use his college training, he was limited to teaching or writing--and teaching paid a steady, if not munificent salary. Several teachers commented that they had enjoyed school or been influenced by a favorite teacher to go into the profession.

Issues like salary, job security, and scheduling were much less important in motivating these teachers, although they were significant considerations for some. Time off in the summers is important to many teachers, either because they want to be home with their children or because they enjoy pursuing other interests. For others, however, the free summer is negated by the necessity of working at another job to make ends meet. The 9-to-3 schedule during the school year is said to be an asset for teachers who are

parents and want to be home when their children come home from school, but several teachers labeled this advantage a "myth"; there is never enough time during the school day to prepare classes and do other necessary paperwork, leaving a choice between staying late at school and taking work home--so while they may be at home with their children, they do not necessarily have any more time to spend with them. As one teacher put it, "This is the worst sort of job to have with a family, because you can't leave the job behind when you go home."

The importance of easy entry and re-entry to the profession was confirmed by several teachers interviewed, who had done something else before becoming teachers or had stopped working for a while to raise children. A male teacher had worked in the trucking industry, another was a cabinet maker, a third was a computer programmer and then spent time in the Navy; several women had left teaching for varying periods to raise children; another woman, who married and had children immediately after high school, went to college and became a teacher when her children were teenagers.

Teaching as an opportunity for upward mobility, or as one of a limited range of careers available, was also obvious among teachers interviewed. Women frequently noted that they had few choices available at the time they were making career decisions. One man, the son of a factory worker, said his father urged him to go into teaching "so he wouldn't come home from work dirty every night." Other men, in commenting on the work they had done before going into teaching, implied that achieving white-collar, professional status was one reason for making the change.

Clearly, teachers are attracted to the profession by a variety of extrinsic and intrinsic rewards.

B. Why Teachers Stay in the Profession

Once in the profession, teachers' willingness to stay depends, in part, on the continuing adequacy of extrinsic rewards, but in much larger part on the intrinsic rewards of their experience. Much of the research on the status of the teaching profession shows that recently teachers have been perceiving a number of changes in their work circumstances that affect the nature of the work they do, and these changes have made conditions for teachers more negative.

1. Changes in Extrinsic Rewards

Two researchers who conducted interviews with 104 educators in the San Jose Unified School District in 1978-79 found considerable concern about the impact on education of social and economic changes, such as tax limitations, equity of spending allocations, declining enrollment, and mainstreaming, highlighted by a sense that the public was extremely unhappy with the performance of local schools. (Calfee and Pessirilo-Jurisic, 1981) Teachers and administrators reported that they were working harder than ever, under worsening conditions and for fewer rewards. Many teachers indicated plans to leave the profession. Major responsibility for the situation was attributed to reductions in funding due to passage of Proposition 13, and additionally to poor public attitudes toward education.

There is reason for teachers to feel this way in California. Salaries are problematic, job security has become shaky, and respect for teachers has declined.

a. Salaries

California teacher salaries compare very favorably with teachers salaries in other states. According to NEA, California teacher salaries which averaged $22,755 were the fifth highest in the nation in 1981-82; the national average was $19,064. (NEA, 1982b) However, it remains true that teachers in this state are paid less than other occupations requiring similar college degrees. Figure 3 compares average annual salaries in California for assistant/associate engineers, programmers, staff services analysts, social workers, and schoolteachers for the years 1972-73 through 1981-82. It shows that teachers have had the lowest average annual salary--$16,671 over the ten-year period--while the next lowest profession (social workers) earned approximately 19% more, and the engineers (the highest paid) earned 37% more than teachers.

Of course, teachers' salaries are not twelve-month salaries but are rather for ten months of the year. It is often argued, therefore, that to make this kind of comparison teachers' salaries must be adjusted upward. We feel that rather than adding two more months' salary at the teachers' ten-month rate, the fairest upward adjustment would be one based on NEA data about teachers' actual summer earnings. Since these averaged just $1,302 in 1981, they make a negligible improvement in the results presented above, raising the teachers' salary only to an average of $17,973 over the last ten years. (NEA, 1982c)

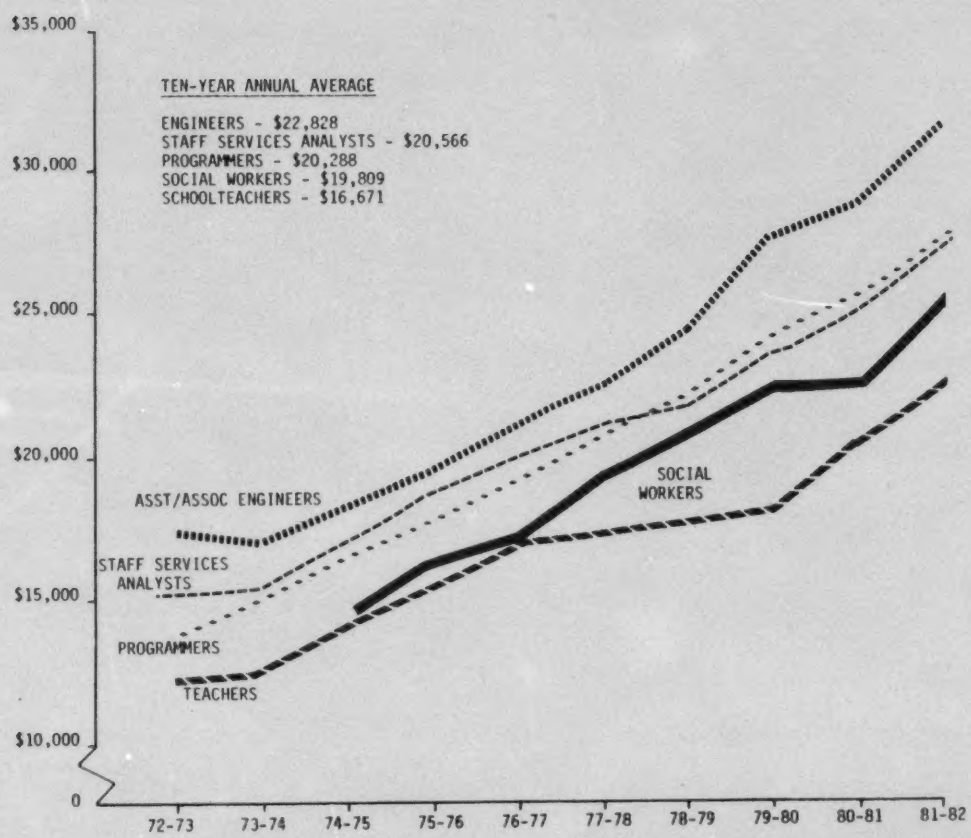
This low average teacher salary reflects a very low starting salary and a pay scale that reaches its maximum in a relatively short time. The average beginning salary in 1981-82 in California for a person with a B.A. degree plus an additional 30 units (the typical first-credential holder) was $14,583; the average maximum was $27,337. (California Teachers' Association) Typically, the ceiling is slightly less than twice the beginning salary and can be reached within ten years. For the approximately 63% of California's teachers who have more than ten years of educational service (SDOE, 1982e), there is no opportunity for salary growth other than inflationary increases and periodic tenure bonuses provided by a limited number of school districts, unless they leave the profession or go into school administration. After ten years, moving up means moving out.

According to the Bureau of Labor Statistics, the Endicott reports, and the College Placement Council reports, beginning salaries for schoolteachers with a B.A. degree in 1980 were lower than any other profession. (Guthrie and Kirst, 1982) This is further confirmed in a survey reported by U.S. News and World Report which indicated that 1983 graduates in engineering, science, and business will be offered salaries substantially higher than graduates in education, in some cases twice as large (see Table 11).

To add to this disparity, teachers salaries have not been keeping pace with inflation as well as salaries for other occupations. All the salary levels noted in Figure 3 rose more slowly than the Consumer Price Index (CPI) rate of 8.6% between 1972-73 and 1981-82 (see Table 12), but engineers',

Figure 3

Average Annual Salaries of California Schoolteachers
Compared to Other Occupations in California
1972-73 to 1981-82



Sources: 1972-73 and 1973-74 data for all occupations, except schoolteachers, are from the Statewide Cooperative Survey by the California State Personnel Board. These salary figures were taken from private industries located in the Los Angeles and San Francisco areas. Data for 1974-75 to 1981-82 are from "Distribution of Salary Comparison Charts" prepared by the University of California Systemwide Personnel Office. It combines salaries from private industries located in the Los Angeles and San Francisco areas as well as governmental pay in California.

Schoolteachers' salaries for 1972-73 to 1975-76 are from California Agency for Research and Education, 1973, 1974, 1975, 1976. Salaries for 1976-77 and 1977-78 are from SDOE, 1977, 1978b. 1978-79 to 1981-82 data are from NEA, 1980c, 1981a, 1982b.

Table 11

Average Annual Salaries for 1983 Graduates in Various Fields

Chemical engineering	$27,083
Electrical engineering	26,031
Computer science	24,485
Civil engineering	22,473
Physics	20,076
Mathematics	17,660
Marketing sales	16,941
Business administration	16,419
Personnel administration	15,931
Communications	15,606
Hotel restaurant management	14,699
Social sciences	13,835
Education	13,358

Source: U.S. News and World Report, December, 1982.

Table 12

Percentage Increase in Certain California Occupations
Compared to the Consumer Price Index
1973-74 to 1981-82

	Consumer Price Index	Programmers	Assistant/ Associate Engineers	Social Workers	School-teachers	Staff Services Analysts
9-Year Average (1973-74 to 1981-82)	8.6	8.1	8.0	8.0	7.4	6.9
1973-74	11.5	7.8	-1.5*		6.5	2.9
1974-75	3.9	11.0	8.0		9.6	9.9
1975-76	8.7	7.1	7.0	10.0	8.5	11.4
1976-77	6.3	6.9	6.5	5.2	4.7	6.2
1977-78	4.8	9.4	6.2	12.5	7.2	4.8
1978-79	11.3	5.2	9.8	6.9	3.4	4.3
1979-80	14.3	10.0	12.2	9.5	1.5	8.6
1980-81	8.9	4.4	5.3	0	15.0	4.9
1981-82	7.8	8.2	8.6	11.9	9.8	8.7

*There is an obvious error in the survey. However, nobody can explain it or provide the correct figure. Therefore, the 1973-74 figure was excluded in calculating the average salary for engineers.

Sources: CPI information is from the University of California Price and Price-Related Indices. Data for all the occupations came from the same sources as Figure 3 of this report.

programmers', and social workers' salaries increased at a rate ranging from 8.0-8.1%, while teachers averaged 7.4%. Staff services analysts' salaries rose at a rate of 6.9%. In the last decade, teachers' salary increases exceeded the CPI only three times--in 1974-75 (9.6%) and in the two most recent years,1980-81 and 1981-82. Over the nine-year period, California schoolteachers have lost more than 20% in purchasing power compounded annually.

While some teachers, union officials, and members of the public argue that collective bargaining has positively affected the teachers' salary levels, specific information about the role of collective bargaining in these salary figures for California is unavailable. The information that is available on a nationwide basis is inconclusive. For example, Richard Wynn has reviewed the relationship of collective bargaining and teacher salaries from 1960 to 1980 and found no evidence to indicate that collective bargaining has had a positive influence on teacher salaries during the past two decades. (Wynn, 1981) On the other hand, David Lipsky has reviewed several major studies published from 1970 to 1980 and concluded that teacher bargaining has increased salaries above levels that otherwise would have prevailed, but that these increases have been rather modest. (Lipsky, 1982)

b. Security

At the same time that salaries have been problematic, job security has declined. Nationally, about 6%, or an estimated 135,000 public schoolteachers, were informed in 1978-79 that they might not be rehired in 1979-80. (NEA, 1980b) Here in California it has become common practice to send substantial numbers of layoff notices to teachers on March 15 and then rescind them in May or August.

The layoff process takes a psychological toll on teachers. Several with whom we spoke noted that the practice of laying teachers off on a yearly basis is demoralizing and frustrating. A high school chemistry teacher told us, "I'm in an area of high demand and I get laid off every year. I get laid off in March and don't receive my final notification until May. The district lays off by seniority 100 people every year; last year 30 were permanently laid off. It's a very demoralizing process. You are served with papers, and, in essence, 'hereby accused of being surplus'."

According to Lortie, historically, people have chosen teaching as a career because of its security. In a 1979 Harris Poll, teaching finished last among a choice of occupations as a field in which to achieve security and make money. (Harris, 1979)

c. Respect for Teachers

The teacher's status in the community has also been changing. Americans have always been equivocal about the status of and value of the teaching occupation. In part, the ambivalence about teachers manifests a more general strain in our culture which historian Richard Hofstadter identified in his Pulitzer-prize winning study, Anti-Intellectualism in American Life. (Hofstadter, 1962) Scholars, academics, artists, and others associated with the intellect have always been the object of suspicion and the butt of jokes as well as the sources of awe and pride. The figure of the schoolteacher, Hofstadter notes, especially suffers this confused cultural legacy.

Not only is the teacher's role unclear, but the role of public education has changed over the years. Until recently, even though we were committed as a society in principle to universal, public education, the school systems in practice served the populace quite selectively. Only a fraction of the entering student population completed high school, and the immigrant poor and minority students dropped out early in disproportionate numbers. Our determination to hold more children longer in the schools, to supply a wider array of service to them, and to establish academic achievement as an entitlement rather than a privilege has added immeasurable challenges to the job of teaching. (Sykes, 1983)

Finally, at the same time as these complexities and contradictions challenge the teacher, there exists among people in both the education and lay communities a perception that we ought by now to know how best to teach and that all we have to do to solve our educational problems is establish and administer policies designed to ensure that teachers practice those methods of teaching that will bring about the desired results. (Shulman, 1983) When the complex problems of the education system are not readily solved, public confidence in the education system and in teachers erodes.

A recent study of stress and teaching identified two major sources of stress: lack of respect for teachers and "barriers" to teaching, which include excessive paperwork, administrative regulations, poor student attitudes, and the threat of violence in the schools. The teachers interviewed not only cited lack of respect as a major source of stress, but also believed that their other problems--the barriers to teaching--stemmed directly from this lack of respect. (Schwartz et al., 1983)

Teachers feel resentment because they are being blamed for declining student achievement and other problems in the schools that they feel are beyond their power to change. Some teachers also believe, however, that the rise of collective bargaining in recent years has contributed to the public's lack of respect for teachers. Where teachers and administrators once worked together, motivated by a shared concern about educating young people, now they are more often in conflict with each other. This adversarial situation, they feel, has brought about increased public scrutiny of teaching, and some teachers feel a loss of dignity and respect. (Mitchell and Kerchner, 1983; also interviews with teachers)

Whatever the reasons for the perception that teachers have declined in prestige in the eyes of the general public, it must affect the status of the teaching profession. In a field where status has always been fraught with contradictions, such a decline, especially on top of salary and security problems, is of serious concern.

2. Problems With the Teacher's Work Experience

In addition to important changes in extrinsic job attributes teachers cannot directly affect, significant problems are also occurring that affect what goes on in the classroom. Although few of these also are under the teacher's control, most researchers and the teachers to whom we talked felt they are more shattering to teachers than the extrinsic changes because they cause teachers to question their own competence and they detract from the

teacher's sense of being in charge--of their classrooms and their professional lives. (Educational R & D Report, 1982; Lortie, 1975)

a. Changes in Students

Several different changes related to students have been occurring in California and elsewhere--demographic changes, new student mixes in classrooms due to legislative mandates, and deterioration in student attitudes.

Some evidence suggests that some teachers are experiencing difficulties in adapting to demographic changes in the composition of their students. As Table 13 shows, the proportion of minority students in California schools has increased substantially in the past fifteen years; now 44% of all students are non-white. While the proportion of non-white professional staff has also grown, it is now just 17%.

Concomitant increases in the numbers of minority students who need help with the English language and in students of all races who need substantial help with basic skills have created new problems for teachers. In addition, adaptations must occur as school populations change. One California study noted that teachers in the district studied, in addition to traditional classroom duties, were expected to handle new, important, and

Table 13

Percentage of K-12 Non-White Pupils and Professional Staff

	Pupils	Professional Staff
1967	25.3	8.6
1969	26.3	----
1971	28.9	----
1973	30.5	----
1977	36.5	14.5
1979	40.0	16.0
1980	----	16.8
1981	43.6	17.3

Sources: Data for 1967-1977 pupils and 1967 and 1977 professional staff are from SDOE, n.d. 1979 and 1981 data for pupils and 1979 data for professional staff are from SDOE, 1982d. 1980 and 1981 data for professional staff are from SDOE, 1982a and 1982b.

difficult problems. This included getting students of different races to interact well with one another and to develop good relationships with both minority and white teachers. (Griffiths, 1983) The author also noted that the teachers' initial lack of intercultural understanding and tolerance made it difficult for some to adapt to perceived differences in the value placed on schooling. One of the principals in Southern California with whom we spoke said of her faculty, "They cannot deal with the multicultural population who don't speak English and don't have middle class values."

It is clear that there is a dramatic permanent change going on in the student population in California which places teachers in an environment where some feel unprepared and uncomfortable.

Similarly, mainstreaming legislation, which calls for the inclusion of educationally and physically handicapped children in regular classroom activity, requires teachers to change the teaching patterns with which they feel comfortable in order to accommodate the new classroom situation. (SRI, study in progress) Children need more individual attention, but average class size has been rising, not falling, since Proposition 13. (Kirst, 1982)

There are, of course, arguments about the value of small class size. On the one hand, researchers who have tried to link class size and student performance have produced confusing and inconclusive results. A UNESCO project in the late sixties and early seventies, for example, found that pupils in classes of more than 30 learned considerably more of everything than did those in smaller classes, while two Far West Lab researchers have found instead, in their work, that there is a small but not dramatic positive relationship between small class size and student performance. (Smith and Glass, 1979) On the other hand, class size is a real concern for teachers, not because it is related to student outcomes, but because, as one observer has noted, "Smaller classes help keep a teacher from going off her rocker. This is," he concluded, "indisputably important enough for us to keep working toward." (Rafferty, 1982) Smith and Glass agree, arguing that there is a substantial effect of class size on teachers' attitudes toward students, morale, and general satisfaction. (Smith and Glass, 1979) The best information we have been able to find about class size in California is presented in Table 14. It consistently indicates that class sizes in California are well above the national average.

On the average, California secondary schoolteachers teach five general education classes per day, the same as the national average. (CBEDS; NEA, 1982) Applying this information to what we know about class size allows us to estimate that secondary schoolteachers in California, on the average, see 145 pupils per day.

Susan Griffiths in her interviews of teachers and ex-teachers, and we in ours, found additional concerns frequently expressed about a deterioration in the attitudes and behavior of students. (Griffiths, 1983) Many teachers said students were not interested in learning, had a lack of respect for education, and seemed to be considerably less able to concentrate than previous generations of students were. In the NEA Nationwide Teacher Opinion Poll, 1980, 54% of the respondents said that student behavior interferes with their teaching, and 60% said that students' attitudes toward learning have a negative effect on the teachers' morale and job satisfaction. In both these

cases, the percentages were substantially higher for high school teachers than for elementary teachers. (NEA, 1980b)

Violence, the most extreme behavior problem, seems to be about as much of a problem in California as in the rest of the country. The 1980 NEA Nationwide Teacher Opinion Poll indicated that 5.2% of the teachers who responded had been physically attacked by a student at least once within the previous twelve months. As Table 15 shows, the percentage for teachers in the West was 5.3%.

The only available statewide California data show that between September 1, 1980, and February 1, 1981, there were 1,710 recorded assaults by students against teachers in the 88% of the districts that reported

Table 14

Class Size, 1981-82

	California	U.S.
Self-contained primary school classes	27	24
Departmentalized secondary school classes--total		24
Art	29	
Drama	26	
English	28	
Foreign Languages	30	
Mathematics	30	
Physical Education	40	
Science	31	
Social Science	32	

Sources: CBEDS, and National Education Association, 1982c.

Table 15

Percentage of Schoolteachers Who Said They Had Been Physically Attacked in the Previous Twelve Months

Northeast Region	5.6
Southeast Region	5.4
West Region	5.3
Middle Region	4.3
U.S.	5.2

Source: NEA, 1980b

data. (SDOE, 1981b) If this is extrapolated to all districts and to a full year, and we assume that each assault occurred to a different teacher, the data would imply that 3% of California's teachers were involved in recorded assaults. This is probably an underestimate since not all assaults are reported; indeed, in the NEA Poll, 15% of the teachers who were physically attacked indicated that they did not report the incident to the police or school officials, largely because they saw no use in doing so.

Although these figures may not seem large, discipline is viewed by teachers and by the public as one of the biggest problems in the public schools. (Gallup, 1969 to 1982; NEA, 1980b) Here in California, public officials have begun to address the problem seriously in recent years: former State Superintendent of Instruction Wilson Riles declared elimination of school-related crimes and violence his highest priority for 1981-82, and then State Attorney General George Deukmejian established a School Safety Center within the Department of Justice in 1980. But the key place discipline problems have to be resolved is in the schools themselves, and in this issue as in many others, the calibre of school administrators is crucial.

b. Problems With Administrators' Attitudes

Researchers who have tried to determine what makes schools effective have concluded that one of the key ingredients for a high-achieving school is an effective principal. (Purkey and Smith, 1982a) Principals play key roles in the areas of student achievement, school climate, power and decision making, curriculum, school-level organization and coordination, and human relations and morale, and their behavior and decisions deeply affect teachers' work experience. What we have found in research specific to California is that many teachers are frustrated in their interactions with administrators. Griffiths, for example, reports, "Teachers feel excluded from decisions about program changes. They think some of the decisions are poorly conceived and suffer from a lack of teaching input. Some respondents also believe the administration is insensitive in the way they handle staff cuts and reassignments." (Griffiths, 1983) The teachers we interviewed also seemed generally negative about administrators' performance. The problems that teachers mentioned to us included:

- Lack of respect by administrators for teachers--"We need to stop the indignities to teachers by administrators...they should not dress us down in public." "Timeclocks should not be utilized...(it) lowers morale and professionalism."

- Lack of support by administrators--Griffith's teachers and those with whom we spoke noted that they need support for disciplinary action, improved attendance, the ability to limit disruptive students' capabilities to interfere with the education of cooperative students, and authority to require that students complete academic tasks--and they don't receive that support.

- Perceived discriminatory practices by administrators--"We have a lack of upward mobility for women in secondary education."

- Incompetent administrators--"The Peter Principle survives in education..." "Stop kicking the incompetents upstairs."

- Adversary relationships due to unionization--Reactions to the effects of collective bargaining are mixed, but some teachers believe that an adversary position between the teachers and the administrators has come about as a result of collective bargaining. "We had a good relationship with the district until collective bargaining started...now resentment (on both sides) is prevalent." On the other hand, a principal in one district commented, "Union contracts haven't changed the relationship between administrators and teachers...we don't have a closed shop."

- Feelings of loss of control--Some teachers have mentioned that while they feel they have some control in the classroom, they perceive they have little control outside the classroom. (Lightfoot, 1983) Teachers resent directives forced upon them from above and decision-making processes in which they have little input. They feel that they have little opportunity to express ideas to policy makers, and that administrators manipulate them and can be either too authoritarian or non-directive.

Interestingly, Bossert et al. (1982), report that women who have become principals posess more qualities that are correlated with effective leadership than do men principals. To quote them,

> Women principals tend to score higher on standardized tests and have more experience in education than male principals...Women more readily exchange information, work more hours, are more inclined to be innovative, are more likely to be democratic leaders, and are more preferred by teachers and superiors than men.

They also note, however, that in California, a disproportionate number of principals are male, despite an increase in the number of females with administrative credentials.

Two other personal characteristics, training and teaching experience, have not been shown by researchers to have a significant relationship to job performance, contrary to public opinion (Bossert et al., 1982), but a fourth characteristic, the principal's ability to be flexible about approaches to teaching and administrative work, seems to be crucial. (Mitchell, Ortiz, and Mitchell, 1983)

It also seems likely that level of school (primary, junior high, senior high) influences the principal's role. Berman and Gjetlen (1982) have come to the tentative conclusion that principals do play a different role in secondary school than they do in elementary schools. For example, their study of the California School Improvement Program suggests that the principal's role

at the secondary level may involve community relations more than at the elementary level. John Goodlad's Study of Schooling also indicates that problems with administrators can create more job dissatisfaction for secondary teachers than for elementary teachers where there is less need for coordination and control. (Bentzen, et al., 1980)

Finally, while it is agreed that principals do influence teachers, it should also be noted that teachers, in turn, influence principals. According to Barbara Butterworth's research (1981), principals and teachers expect a great deal from each other--primarily support in assuming and maintaining their own authority. This mutual relationship and its effect on the teacher's self-confidence may be as important to satisfaction as any of the other elements of a teacher's work experience.

c. The Problem of Autonomy

Another important dissatisfaction in teachers' lives has to do with their autonomy. Teachers join what they believe is a profession. And yet autonomy--one of the essential elements of professional life--is not part of their work. It has always been true that teachers, more than any other professionals, are under constant public scrutiny and are therefore less free to act than doctors, lawyers, engineers, librarians, or even social workers. However, teachers now feel that lack of freedom inside as well as outside the school. One Boston teacher put it this way:

> You have a great deal of autonomy about what goes on in your classroom within those four walls, but at the same time you have to be sure that it looks a certain way, that it appears to be the way that it's supposed to be on the outside. In other words, you can't do anything that is too apparently outré without bumping up against things. So the fact that we "control" 25 or so little people is very small compensation for not feeling as though we can control the kind of books we can order, have the kinds of programs we want, the kind of feeling of friendliness throughout the school.... (Boston Women's Teachers' Group, 1983)

Many writers have pointed out that teaching does not have the characteristics of a profession. (e.g., Mitchell and Kerchner, 1983) Generally speaking, teachers do not control the legal system that grants them specific rights and protections; they do not have autonomous control over the work; they do not control access to their services by making it illegal to practice the profession without a license; they do not make membership depend upon an extended period of rigorous training and formal examination; and they do not have high social status. It has, in fact, been effectively argued that the current collective bargaining practices support rules and procedures that emphasize the direct inspection of teaching work and the close planning of teacher duties by school administrators rather than teachers themselves. Thus, the laboring aspects of teaching are emphasized rather than craft, artistry, or

professionalism. (Mitchell and Kerchner, 1983) One of the teachers with whom we spoke addressed this ambiguity of role definition, "It's weird...we went through school being told we were being trained to be professionals, and then, the first day on the job, we were told where to sign up for the union." The tension between wanting control over the classroom and the work life but also having to respond to multiple demands from the public, parents, and administrators is a serious problem at a time of few other rewards.

d. The Problem of Advancement

People entering the teaching profession rarely consider the fact that the career ladder for teachers is very limited. Not only do teachers top out in salary after only ten years, but the routes to intellectual growth, improvement of skills, and recognition for talent are very limited. After a very brief learning period of 2-3 years, teachers are veterans, and the job structure does not encourage or automatically provide incentives or opportunities for development. (Boston Women's Teacher's Group, 1983; Lortie, 1975)

Some argue that this adds to the evidence that teaching is not truly a profession. Lortie has pointed out that teaching is "careerless." The neophyte is virtually indistinguishable from the thirty-year veteran. To advance, teachers have to move out--either into administration or into another field. In addition, the incentive system is largely insensitive to variations in talent and effort. Dedicated and effective teachers receive the same salary, vacations, and other benefits as non-effective, non-productive teachers. Teaching is one of the very few professions that, as one study put it, does "not impose or allow for, changes in the type of work activities as a function of experience." (Lipka and Goulet, 1979) This, too, has to be destructive to a teacher's sense of personal competence.

C. A Note About Private School Teachers

In recent years, as perceptions of problems in the public schools have increased, policy makers and researchers have begun to ask why private schools seem to work better. James Coleman's latest major study (1981) argues that private schools educate students better than do public schools even when differences in student background are taken into account (though his findings are being hotly contested). (Noell, and Mc Partland and Dill in Harvard Education Review, 1981; Murnane in Sociology of Education, 1982) Researchers who have, more generally, tried to explain school effectiveness, have pointed out that the characteristics of their "effective schools" very closely resemble those Coleman lauds in his "private schools"--more discipline, more homework, and higher academic expectations--the qualities of teaching and administration that encourage learning. (Purkey and Smith, 1982a)

The interesting point for our analysis is that teachers in private schools appear to be willing to work for less pay. Nationally, salaries for teachers in private day schools affiliated with the National Association of Independent Schools (NAIS) averaged $16,103 in 1982-83, compared with $20,531 for public schools; for the Far West the figures are $17,660 compared with $23,612. And although the purchasing power of those salaries has declined for all teachers, it has declined more severely for private school teachers: 16.5% from 1971-72 to 1982-83, compared with 13.2% for public school

teachers. Interestingly, however, if one looks only at the period from 1979-80 to 1982-83, private day school salaries have increased 4% in real terms, while public school salaries declined 5.4%. (NAIS, 1983; NEA, 1982b. NAIS boarding schools are not included here, because their total compensation for teachers often includes housing as well as salary.) In general, it appears that most private schools (except for the most elite) achieve their success at a much lower per-student cost than the average public school, in part because of lower teacher salaries. (Greeley, n.d.)

NAIS has also studied job satisfaction among teachers in their member schools; 94% of teachers surveyed in K-8 day schools and 91% of those in day schools for grades 7-12 expressed more satisfaction than dissatisfaction with their jobs. The most frequently mentioned sources of satisfaction for teachers at all levels were challenges in their work, relationships with students, and a sense of professional achievement. The most frequently mentioned source of dissatisfaction, not surprisingly, was salary. (NAIS, 1980) These data seem to support the argument that the intrinsic rewards of a supportive work environment are powerful incentives for teachers.

D. Effects of Recent Changes on Teachers

It is apparent from national data that teachers' satisfaction with their jobs is declining. NEA has surveyed teachers every five years for the last twenty asking, "If you could go back and start over, would you become a teacher?" The percentage who answered that they "certainly would" has declined dramatically, as Figure 4 shows, from a high of 52.6% in 1966 to a low of 21.8% in 1981. The percentages of those who said they "certainly would not" or 'probably would not" become teachers has risen comparatively. Figures for the West show that teachers in this part of the country have been and still are slightly more satisfied than is true nationally, but the trend is the same.

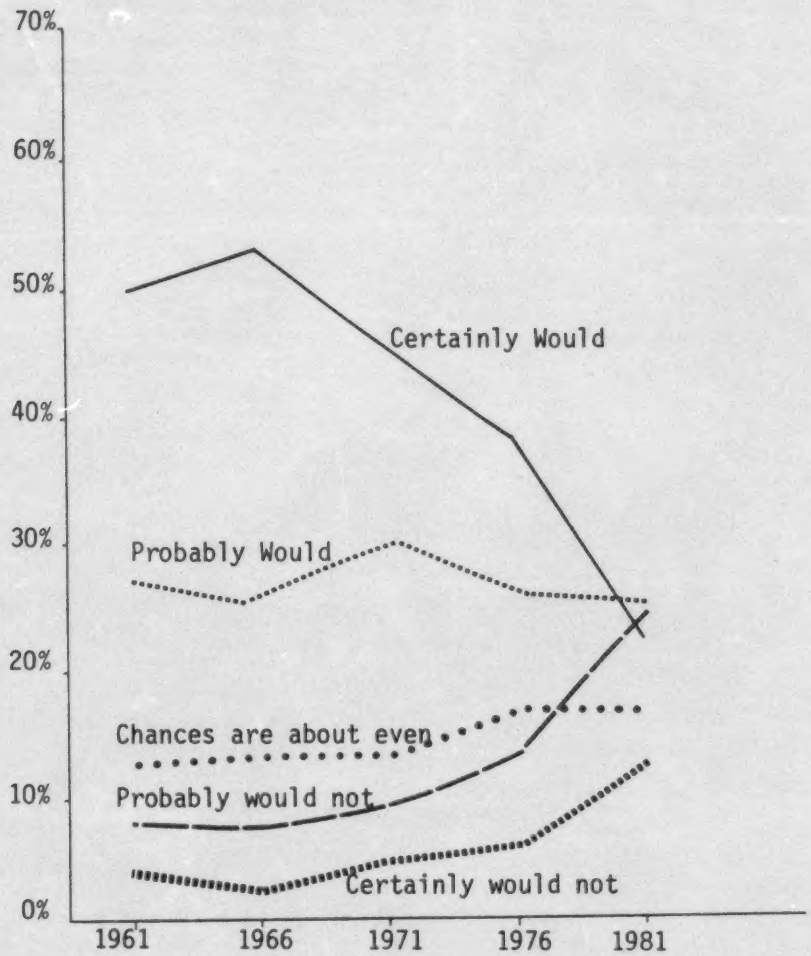
The circumstances we have described above help to explain the dissatisfactions of current teachers with the profession and with their work experience. It seems likely that, as these problems become more widely publicized, they will hinder the recruitment of new teachers--not only because of reduced extrinsic rewards in comparison with alternative career opportunities, but even more significantly, because both practicing and potential teachers may have less faith that they will be able to help students and that teaching is worth the time devoted to it.

Despite these findings, there is still considerable altruism among current teachers. A substantial number of the teachers we interviewed, while lamenting low salaries and a loss of autonomy over their day-to-day teaching, nevertheless remain convinced that they can continue to succeed in educating children. Younger people making their first career decisions, however, may be less willing to make the kind of sacrifices that earlier generations of teachers have made in the name of helping youth and advancing our society.

Figure 4

Responses to Question About Becoming a Teacher

"Suppose you could go back to your college days and start over again; in view of your present knowledge, would you become a teacher?"



Source: NEA, 1982c.

III. CONCLUSIONS AND POSSIBLE SOLUTIONS

It is clear that the teaching profession, in California as well as nationally, is facing serious problems. Salaries are low compared to alternative professions, job security (traditionally an important attraction) has been shaken by cutbacks, and public opinion and the media have put teachers on the defensive. Inside the schools there are problems, too. Changes in students make teachers feel less confident, shortened school days and school years are limiting what can be accomplished, above-average class size has a negative effect on teacher morale, teachers have decreasing autonomy and no room for advancement within the profession, and some administrators do not seem to be addressing these problems creatively, but are instead adding to them with a lack of support for teachers' authority.

In the next ten years, there is a good probability that California will face a teacher shortage across the board of the sort it now faces in mathematics, science, and bilingual education. This general shortage, however, will not be caused by a lack of credentialed teachers, but rather by the existence of better alternatives, and by the fact that the teaching profession is an unattractive career choice. Indeed, it is frequently argued, teaching is hardly a profession at all.

In the past, when teaching had a more captive population of bright women, for whom few alternatives existed, school systems did not need to worry much about ensuring an adequate supply of teachers or providing the kinds of salaries and environments that would attract and retain the best. Now, in a society in which many more jobs are service-oriented, white-collar, and open to all races and both sexes, the teaching profession, the policy makers who provide for it, and the administrators who manage it need to reassess what is required to make teaching a competitive career.

The reasons for this should be obvious. A workforce that is low in morale, insecure in its position, underpaid, and constantly concerned about its competence and its ability to control its own worklife cannot work at peak performance to help our children learn, and our children are our society's future. Gary Sykes has put it well in saying, "Who shall teach...is today the most pressing question facing our educational system; failure to respond to this question is likely to compromise any other reform measure under consideration." (Sykes, 1982)

Knowing where to begin is, however, more difficult than recognizing the problems. Here in California, responsibility for the professional life of teachers is very divided; no one actor or group of actors can themselves make the set of improvements that are necessary. Legislators, superintendents, principals, school board members, union officials, institutions of higher education, parents, the media, CTC, the State Department of Education, and, not least, teachers themselves all have a role to play in solving this profession's problems. What is

required is some agreement (1) that changes are needed, and (2) that there are some clear solutions that should be pursued. We hope that this report will make the need for change clear and that this chapter will provoke enough discussion about solutions to identify useful directions to pursue.

One final caveat: although it is clear that the profession has problems, it is not always easy to tell how bad those problems are and whether they are getting better or worse. Information about California teachers is by no means complete. The most comprehensive data base on teachers is the State Department of Education's CBEDS. CBEDS is indispensible but also insufficent--indispensible because it is an important source of high-quality information that supports administrative decisions about teachers and provides the State's only overview of teacher demographics and teaching assignments, but insufficent because it lacks a comprehensive structure and omits some key data elements that could facilitate some valuable policy research. For example, neither CBEDS nor any other source, can identify the number of teachers teaching outside their subject areas, the amount of time each day that teachers teach, how many supplement their income with second or summer jobs, or what school-related work they do outside the classroom.

With several simple, low-cost enhancements, CBEDS could become a much more important tool for policy research. Those include: (1) a data dictionary to help users interpret results, (2) a review by educational researchers and policy makers to see that the survey includes all essential information about the lives of teachers, (3) a survey strategy that reduces the burden on teachers by asking only a limited set of essential questions to the full population and a more comprehensive set of questions to a smaller sample, and (4) the development of data-processing and report-writing features that will make the information more accessible to local users.

This enhanced version of CBEDS could become even more powerful when coordinated with other existing information sources about schools and teachers--for example Census data, the California Assessment Program, the State Teachers' Retirement System, the Commission on Teacher Credentialing's records, and the new Teacher Proficiency Examination. We are not suggesting a data system that would monitor every teacher's moves, but rather one that would allow analyses of the profession's changing demographics over time. It seems reasonable to think that we should be able to know whether the K-12 teacher workforce in California is aging, or how many newly credentialed teachers found full-time jobs, or for how many teachers' families teaching is a second income. But, without coordination of sources and consistency over a period of years, we cannot have information like this.

Finally, there is no information in present data systems about private school teachers. It would be very useful to be able to compare their salaries, their training and the nature of their work with those of teachers in the public schools.

Despite these limitations, we feel that enough information exists to suggest two important conclusions which are discussed below:

- Just holding still, maintaining the teaching profession's appeal at its current limited level, will require significant effort, and

- Any real improvement in the attractiveness of the profession will require major efforts to redesign the teachers' career pattern.

A. Just Holding Still Will Require Significant Effort

1. More Money

The old adage that "you get what you pay for" appears to be true in this circumstance and may become even truer if a general shortage of teachers materializes in the next decade.

According to the National Education Association's statistics, California in 1980 spent on K-12 education the equivalent of 3.46% of the State's personal income, making it 49th in the ranking of the states. (NEA, 1982b) To be first, California would have to increase its expenditures by about $11 billion or 125%. Simply to equal the national average, expenditures would have to increase by $2 billion or 24%.

It is also important to note that, according to recent studies, California can afford greater expenditures on education. An analysis done by the Federal Advisory Commission on Intergovernmental Relations, comparing the various states' taxation ability and performance, concludes that in 1980 California had a 17% greater capacity for tax revenue than other states but was taxing itself at only the national average. (ACIR, 1982) An increase that utilized all of the tax capacity could net $4 billion above current revenue levels per year.

Of course, as the Legislative Analyst has pointed out in analyzing the Governor's 1983-84 Budget, although California "can afford to spend more on education in absolute terms than other states," it may not choose to do so. (California State Legislature, 1983) Indeed, in recent years other services have received higher priority. Using the NEA measure described above (expenditures as a percent of personal income), California ranks high among all states for investment in other public services (8th in police protection, 8th in fire protection, and 8th in public welfare), about average (25th) in higher education, but 43rd in health and hospitals and 49th in elementary and secondary education. (NEA, 1982b) A recent poll conducted by Opinion Research of California found that 53% of the respondents believe that the cost of California public school education per resident should be among the top ten in the nation. (Opinion Research, July 1982)

It is time to recognize this disparity and develop among the public and the Legislature a willingness to increase spending for the public schools. Of course, simply spending more will not solve the teaching profession's problems; the money must be spent in useful ways. Some possibilities are suggested below.

a. Higher Salaries

As Section II of this report indicated, present salary levels for teachers do not compare favorably to those of other professions and alternative careers. Although increases would be costly and may be economically and politically infeasible, it is important to consider raising teachers' salaries, particularly starting salaries.

In order to present some sense of the magnitude of dollars involved in any salary increase, we constructed a model based on the data about numbers of teachers in the demand analysis of this report, and using estimated average salary data provided by the California Teachers Association. We assumed no change in the pupil-teacher ratio, no inflation, a retirement and resignation rate of 8%, and all hires at the first step. The results are, therefore, conservative estimates. Details of the model are presented in Appendix 3. Table 16 presents the results of our analysis.

Option I maintains the present salary structure, and shows that an additional $457 million (in 1981 dollars) will be needed by 1991 if no change in salaries occurs. This increase is due primarily to new hires to meet enrollment growth.

Option II considers what would happen if starting salaries were increased by 13.4%, the equivalent of two steps on the scale (from $14,587 to $16,545), but the maximum of $27,382 was maintained. This would effectively reduce the salary scale from 11 to 9 steps. This change would require $135 million now and $629 million more than that in 1991.

Option III shows the difference that would occur if all teachers' salaries were increased by increasing each step 13.4%. Compared to Option I this plan would require an additional $507 million now and $528 million more than that in 1991.

Table 17 summarizes these findings.

Increasing expenditures by the largest amount suggested here ($1,035 million) would improve California's ranking in expenditures per dollar of personal income from 49th to 45th, assuming no change in other states' expenditures.

b. Differential Pay

Since it may be unrealistic to expect State expenditures for K-12 to increase by $1 billion, another alternative is to use what new money there may be selectively to induce people to take teaching jobs in the areas of greatest shortage or to reward outstanding achievement.

Table 16

Total Cost of Teacher Salaries Under Different Assumptions
(in millions of 1981-82 dollars)

	Expenditures in 1981	Expenditures in 1991	1981-91 Increase in Annual Expenditures
Option I--no change	$3,858	$4,315	$457
Option II--higher starting salaries	3,993	4,622	629
Option III--increases for all teachers	4,365	4,893	528

Table 17

Annual Expenditure Increases Required by Various Salary Options
(in millions of 1981-82 dollars)

	Increase over Option 1 (1981)	
	1981	1991
Option I--no change	$ 0	$ 457
Option II--higher starting salaries	135	764
Option III--increases for all teachers	507	1,035

The Houston Independent School District of Texas is using a differential pay plan to address four areas of concern: (1) improving instruction (test scores), (2) stabilizing staffing (absenteeism and turnover), (3) solving teacher shortages (math, science, special education, and bilingual education), and (4) rewarding teaching as a career. (Say and Miller, 1982) The specific categories that qualify for additional pay are:

- Service in a school with a high proportion of educationally disadvantaged students ($2,000 stipend)
- Teaching assignment in areas of teacher shortage ($800 for math, and science teachers; $1,000 for bilingual education; and $600 to $900 for special education)*
- Five or fewer days of absences from school ($50 to $500 depending on the number of sick days unused)
- Grade of B or better in college courses or in-service training appropriate to current teaching assignment ($300; another $100 is added if the courses are in the area of critical teacher shortages)
- Service in a school in which standardized test scores increased more than was predicted statistically ($800), plus $400 for teachers in the schools that exceeded their predicted achievement levels by the greatest amounts (the top 10%)
- Service at a campus with special problems that negate assessments like those above (i.e., students who are unable to take standardized tests) ($450 to $750, with annual teacher evaluations)

* These amounts are adjusted annually, depending on available funds and the difficulty of hiring in shortage areas. Stipends for 1982-83 are expected to be $1,500 for math and science, $2,000 for bilingual education, and $700 to $1,000 for special education teachers.

In the first three years of the program, approximately two-thirds of all teachers received stipends. The average stipend was $936; the range was $300 to $3,500. Over the three-year period, vacancies in critical teacher shortage areas decreased from 251 in 1979 to 21 in 1982, and in December 1982 there were no shortages in math or science fields, although a serious shortage of bilingual teachers still exists.* Attendance increased from 95.6% to 96.1%, average achievement levels of students in grades 1 through 6 remained at or above grade level, and test scores in grades 7 through 12 improved. There are fewer vacancies, and staff stability has increased. Because community recognition is valued in this model, public receptions honoring the stipend recipients are held each year.

A different kind of differential pay plan, more purely a merit pay plan, has been established in Round Valley, California. (Burke, 1982) School board members in this small district discuss with individual teachers (or group of teachers in the case of a cooperative project) the value of a project the teacher(s) propose, based on a maximum 10-point system, and the appropriate methods for evaluation. At the end of the year accumulated points are converted into dollars. The nature of the proposals are not rigidly prescribed; they have ranged from creating electives, establishing writing, health, and physical education programs, to organizing contests and extracurricular activities. Annual evaluation of teaching performance by the principal also creates merit points. The minimum merit pay under this plan has been $140 and the maximum, $2,800. Rewards and those receiving them are strictly confidential and are not publicized.

A third variation is being tried by Tucson, Arizona's Catalina Foothills School District which established a "Program for Excellence" in 1980-81, based on Frederick Herzberg's theory of motivation-hygiene. (Frase, Hetzel and Grant, 1982) Given Herzberg's theory, the Tucson program tries to focus on motivators. Principals' evaluations serve as the basis for recognition and principals also recommend the size of the award. Awards are not necessarily made in cash. In fact, other kinds of awards related to improving classroom work, like attendance at out-of-state professional conferences, computer time, and instructional materials, are encouraged. The value of the awards ranged from $80 to $1,000.

It is important to note that differential pay plans are controversial. Discussions about differential pay bring out strongly held differences between those who believe that teachers in shortage areas should be paid more, those who are motivated by concerns about equity, and those who are concerned about the practical problems of implementation. The major practical objection to differential pay plans seems to be a concern that administrators or school boards could use them inappropriately to reward friends, lackeys, or people who score well on inadequately designed tests. The three plans described above suggest that the concern can be addressed by providing collective rewards to all teachers in a high-achieving school, by agreeing on evaluation procedures with teachers in advance, and by giving non-monetary awards related directly to improving classroom work.

* It is important to note that in addition to offering financial rewards, the Houston School District has begun extensive recruiting for new teachers out of state, especially in the Mid-West. They indicate that very few of their new teachers in shortage areas are trained in Texas.

Setting the more controversial merit pay ideas aside, we can use the cost projection model described above and in Appendix 3 to estimate what it might cost California to institute a differential pay plan in shortage areas. Appendix 4 explains how we estimated current shortages and projected demand for math and science teachers and bilingual education teachers; information about needs in special education was not sufficient to include them in these projections. After looking at the current number of teachers in these fields and multiplying them times the stipends Houston is giving this year ($1,500 for math and science, and $2,000 for bilingual education) to estimate the cost of stipends in 1981, we projected demand to 1991 and estimated the cost of stipends if shortages were filled by then. The results are presented in Table 18.

It would cost California $35 million today to give stipends to currently employed teachers in these fields; to fill the shortages, that cost would increase to an annual cost of $77-89 million by 1991; most of the increase would be due to the current large shortage of bilingual education teachers.

c. Loans/Fellowships

Finally, a different kind of incentive system could be established to attract excellent undergraduates to the teaching profession by offering low-cost loans or fellowships contingent upon service in teaching.

For example, a program of loan forgiveness modeled on the NDEA act of 1958 could be developed for students wishing to become math or science teachers. Loans might be forgiven at the rate of 10% of the principal for each year of service up to a maximum of 50%, and additional forgiveness could be offered, for example, for service in school districts with special needs.

State Senator John Garamendi presently has a bill like this under consideration by the California Legislature (SB 204). It would establish a Mathematics and Science Teacher Incentive Program, awarding loans of not more than $3,000 to students training to be math and science teachers. After two years of teaching in these fields, 25% of the loan would be

Table 18

Additional Cost of Differential Pay in Shortage Areas
(in millions of 1981-82 dollars)

	1981	1991
Math and Science Teachers ($1,500 each)	$ 22	$ 29
Bilingual Education Teachers ($2,000 each)	13	48-60
Total	$ 35	$77-89

forgiven; after a third year, 25% more; and after six years, the entire loan would be forgiven, including accrued interest. The program is expected to cost $3 million per year plus administrative expenses.

A different type of incentive program has been introduced in the assembly (AB 330) by Assemblymen Hughes, Bergeson, and Campbell. It would provide additional funds to the Student Aid Commission for a "California Math and Science Teacher Training Loan Assumption Program." Its purpose is to encourage more college graduates to become teachers in math, science, and technological fields and to serve in school districts where there are shortages in those fields. Under this plan the Student Aid Commission would repay $2,000 of the teacher's outstanding loans from the federal Guaranteed Student Loan (GSL) and National Direct Student Loan (NDSL) Programs after the first school year of service, an additional $3,000 after the second consecutive school year and another $3,000 after the third consecutive school year of service.

Similar kinds of programs could also be developed for other shortage areas, such as bilingual and special education.

2. Efforts to Improve the Unsettled Environment

Money is, of course, only one part of the teaching profession's problem. Equally devastating are increasing job insecurity and a lack of public respect.

a. More Job Security

Although some insecurity is inevitable, several teachers we interviewed expressed the hope that the State budgeting system for schools could be changed to do away with the annual routine of layoff notifications that are later withdrawn and contract negotiations that extend into the school year for which the contract is being negotiated. Security may be impossible, but predictability would help.

b. Better Public Relations

The teachers we interviewed also made a number of suggestions about improving the public image of teachers. In fact, those we interviewed in Los Angeles said that turning the media around was the most important change possible. Some ideas included: bumper stickers, "Public School Week," getting famous people to talk about their teachers on television, a public relations system to get good news about teachers into the media, getting newspapers to give equal time to academic news and not just publicize athletics, publishing good human interest stories about what teachers do all day, selling the value of education, and convincing television producers to create TV serials, good comedies, and dramas with teachers as central characters.

In addition, the California (Business) Roundtable has recommended a broad information campaign that would argue (1) that the health of the public schools is crucial to the well-being of California's economy, (2) that the schools' health requires community and parent involvement and

support, and (3) that even though many teachers and administrators have done a good job, educators need help to make the necessary improvements. They think such a campaign ought also to suggest specific ways in which parents and community members could help the schools--e.g., with advice about standards and school activities, volunteer work in the schools, participation in school board elections, ceremonies honoring outstanding teachers and administrators, and fund raising. (Berman and Weiler, 1982a and 1982b)

Any information campaign should be geared, not just to those with children in school, but to the entire public.

3. Recognition of Teachers' Needs in School-Level Attitudes and Practices

This report has argued that, while extrinsic rewards like adequate money, security, and respect are necessary, they are not sufficient without concurrent intrinsic rewards that make teachers feel competent and in control of their worklife. We, therefore, want to stress here that there are important improvements that require no additional money, but that must be made to make teachers' lives better.

a. Increasing Administrators' Respect and Support for Teachers

In order for good teachers to want to stay in teaching, schools must be pleasant places to work, and teachers must feel respected and appreciated. No one in a school has a greater impact on the "ethos" of a school, as Gerald Grant has called it (Grant, n.d.), than the principal and his or her administrators. They can make or break a school. The school effectiveness literature agrees. (Purkey and Smith, 1982a and 1982b)

Good leadership is supportive of the teachers' decisions about discipline, sets high expectations of performance for teachers, reduces to a minimum unnecessary interruptions of classroom work, and builds a good environment for adults, not just for students, an environment in which adults can interact as friends and as professionals and develop a sense of joint purpose. In contrast, research has shown that poor school leaders impose their authority from the top down, fail to back up their teaching staff on discipline issues, and/or do nothing to counter the inherent loneliness of the teaching job.

In recent years, several kinds of efforts have been made to improve school administrators' leadership skills. The process by which individuals in California attain the administrative services credential has been reviewed several times, and these reviews have led to a two-stage credential: (1) a preliminary services credential, and (2) a professional services credential. To obtain the second credential, a candidate must successfully complete field experiences or a structured internship designed to develop the requisite leadership ability. The Legislature, in 1982, also created the California Leadership Institute for administrators' ongoing development; however, it has not yet been funded.

In addition, the Association of California School Administrators (ACSA) has begun to address some of the problems of management training in the past year with its Consortium on Advanced

Leadership. This 200-hour program is designed to upgrade the skills of administrators in seven competency areas including leadership, school management, personnel management, and improvement in educational programs.

The point here is that ACSA and the State government, in altering credentialing requirements and creating leadership programs, are fostering changes in administrators' professional growth and development that are important not only to administrators but especially to teachers. The teaching profession needs school leadership that can identify needed improvements in the teacher's work environment and will work to provide them.

b. Creating a More Supportive Environment

Numerous specific suggestions have been made for restructuring the teacher's work environment to create a greater sense of personal competence and control for teachers. Suggestions we have noted include:

- Reducing class sizes
- Providing additional support services in the classroom, such as teacher aides
- Reducing classroom disruptions
- Limiting severely the amount of paperwork required
- Redesigning the workplace physically to encourage interaction among teachers and reduce isolation
- Fostering team teaching and other cooperative efforts in order to reduce isolation and increase intellectual challenges
- Formally providing new teachers with special support and guidance from experienced teachers
- Involving teachers in the development of school goals and performance expectations
- Encouraging interchange between teachers and visitors or temporary employees from private industry, that is not limiting visitors' contact to students and classrooms, but structuring time for adult interactions as well
- Honoring outstanding teachers

c. Fostering Staff Development in the Schools

Finally, within the bounds of existing resources, more can be done to foster and improve professional growth programs for teachers.

Although professional development is usually advocated as a way to improve teachers' abilities to teach children, it should also be recognized as an important ingredient in a satisfying and stimulating professional life. Recent research about professional development for teachers argues that success in both these goals depends on three elements. First, each school must sustain an active environment for accepting new ideas and must make continual professional development an integral part of the culture of the school. School environments can be made more receptive to new ideas by setting aside more time for classroom visits and observations among colleagues, by having a principal who supports and encourages acceptance of new initiatives, by developing a trust between the principal and teachers when a new practice is being implemented, and by allowing teachers who handle change well to take more of a leadership role. (McKibbin and Joyce, 1980 and 1982; and Joyce, 1981)

Secondly, those who design professional development programs and in-service training courses must recognize that teachers vary in their receptivity to learning and to new ideas. Joyce and McKibbin have characterized teachers as omnivores, active consumers, passive consumers, resistent, and withdrawn, and argue that more attention should be given to matching different types of teachers with learning environments appropriate for their level of development. (Joyce and McKibbin, 1982)

Thirdly, in-service training is worthwhile only when it is tailored to solve practical problems faced by the participating teacher or is directly related to improving his or her understanding of the subject matter to be taught. These are areas where California's Teacher Centers (now TEC Centers) have made substantial advances by involving teachers in planning their own training and in assisting other teachers' growth. Practice with peers, immediate feedback, and collegial coaching groups on site in the schools appear to be promising practical approaches. (Zigarmi, 1978; Hering and Howey, 1982)

An especially interesting experiment in in-service training will begin this year in Pittsburgh, Pennsylvania. One high school (Schenley High) has been chosen as a permanent site for on-going in-service training. Seventy-five teachers have been selected through interviews and reviews by principals to be the resident staff at Schenley High and have gone through intensive training to prepare themselves, not only to teach the school's students, but also to train and work with visiting teachers. Four times a year, a new cohort of teachers from the district's nine other high schools will come to Schenley for an intensive nine-week staff development curriculum which is intended to review and refine their instructional skills, give them a broad perspective on modern youth culture and its implications for effective teaching, and update the teacher's subject area knowledge. While they are attending Schenley, a corps composed of the first teachers to be trained at Schenley will be teaching their classes.

The program is especially exciting because it will ensure that all of the district's high school teachers, within four years, will have experienced an intensive, consistent curriculum combined with in-service training in live-classroom situations; and implementation of desired changes will be facilitated by the fact that all teachers will have been introduced to them. The hope is that an environment receptive to new ideas will grow within each high school as the teachers trained at Schenley return to their classrooms.

Good staff development designed to solve practical problems and to meet the personal needs of different types of teachers can make an important contribution not only to the quality of teaching in the schools but also to the satisfaction teachers feel with their professional lives.

B. Any Substantial Improvement in the Attractiveness of the Profession Will Require Major Redesigning of the Teacher's Career Pattern

Although the efforts described above seem substantial, they are merely stop-gap measures. Significant improvement in the teaching profession's attractiveness will require fundamental changes in the profession itself to make it more of a profession.

1. Tougher Entry Standards and Renewal Requirements

The literature on standards in the teaching profession seems to argue primarily about hurdles, that is, about how many decision points should exist before someone is considered a full-fledged professional. Some researchers and educators believe that the only way to attract high quality teachers is to remove bureaucratic hurdles, accept the fact that teacher education programs offer little that on-the-job experience cannot, and make it easier to hire bright students who have strong disciplinary backgrounds but no experience or training in education. (Report of the CCSSO, 1982; Schlechty and Vance, 1982; Sykes, 1983; Lyons, 1980; Kerr, 1983) Others maintain that the best way to increase the prestige of the teaching profession and attract more bright people to it is to make the profession more difficult to enter and more challenging to stay in. They argue for admissions exams, prior experience related to teaching as an entry requirement, more rigorous subject requirements, competency-based preparation programs, certification tests, not just of basic skills but of advanced ones, and perhaps a probationary internship.

We feel that this argument is misdirected, that the way to improve the profession is not to emphasize or remove hurdles--not to concentrate on hurdles to any great extent--but to raise standards. We believe that enough quality control mechanisms are available now, but that we are not using them well, not making the standards at existing decision points sufficently high. This approach would advocate higher entry requirements for teacher education programs, more challenging courses, thorough-going reviews of teacher education programs that focus entirely on questions of quality and accomplishment, mentors for new teachers, and meaningful performance evaluation throughout a teacher's career.

Several states have been trying to make requirements more stringent, and although some of the effort is directed toward more hurdles, some is clearly intended to raise standards. The State of Georgia, for example, now requires that applicants to teacher programs take tests for both basic skills and their major subject; prospective teachers must pass a criterion-referenced test in their teaching field; and state observers monitor teaching performance at least six times in the first three years using a formal rating instrument for a set of generic competencies. South Carolina requires that beginning college students take a basic skills exam to gain admission into teacher preparation programs; student teachers must have at least one full semester of practice

teaching with at least three observations by a university faculty member; and provisional teachers receive at least three evaluations per year. And Oklahoma's new procedure increases admissions standards, requires more clinical work, mandates competency tests in subject areas, provides for a first-year internship before certification, and includes regular monitoring of first-year teachers by a committee composed of a principal, a consulting teacher, and a teacher educator. (Sykes, 1982; Kleine and Wisniewski, 1981)

This toughening of requirements is the approach recommended by the Commission on Teacher Credentialing here in California and included in State Senator Gary Hart's proposal in the last session (AB 3472). This bill, which failed but has acted as an important catalyst for discussion, would have created a two-step basic credential: a preliminary credential which would be issued after the completion of an approved program; and an advanced teaching credential issued after experience as a full-time teacher and completion of a structured program of study of at least 24 units or the equivalent developed jointly by the candidate, the school district, and an institution of higher education. The bill would also have removed current limitations on the length of teacher preparation programs, allowing institutions of higher education more latitude in program design, and it would have eliminated for future teachers the possibility of a "life" credential, requiring instead that advanced credentials be renewed every five years based on active teaching experience and continuing education. The states of South Carolina and Florida now require periodic recertification, asking veteran teachers to pass evaluations and take additional coursework in their subject fields. (Robinson and Mosrie, 1979; Sykes, 1982)

Another movement in the direction of higher standards is occurring in response to California's teacher proficiency test (CBEST). Some institutions of higher education are considering making CBEST an entry requirement for teacher education programs, encouraging students to take the test as early as their junior year in college so that problems can be diagnosed and remediated early on.

The primary problem with making standards more stringent is the fear that, at a time of shortage, strict standards will reduce the number of available new teachers, making shortages worse. However, there is no evidence to support this contention, and we are convinced that if teachers and prospective teachers see changes in requirements as an attempt to raise standards and not as just another set of hurdles, they will see the changes as benefits to themselves as well as to the profession.

2. Restructuring the Profession to Build in the Possibility of Change and Growth

To address the problem of the "careerlessness" of the teaching profession, several educators have suggested schemes to change the pattern of progression in teaching.

a. Master Teachers

John Goodlad has proposed that higher education cooperate with the public schools to create a corps of "lead teachers." Through competitive scholarships, such programs could attract the ablest teacher candidates and provide for them a two-year master's program combining

educational theory and practice with additional coursework in particular subject matter areas. Lead teachers would take special positions reserved for them in local districts, assuming additional responsibilities, providing leadership, and receiving extra pay. (Goodlad, 1982)

Donna Kerr has suggested a similar plan involving a three-year doctoral program in teaching, "grounded in theory and empirical studies and supported by a research-wise clinical component." Those holding such degrees would be placed in the schools as "head teachers," whose role would be to improve the working competence of all the school's teachers and whose pay would be commensurate with the added responsibility. (Kerr, 1983)

Governor Lamar Alexander of Tennessee has proposed a far-reaching Better Schools Program, part of which involves a Master Teacher plan, which Governor Alexander has called, "the single most important part of the most important program I will ever recommend. . . ." (Tennessee, 1983b) This plan sets up four career stages: Apprentice Teacher, Professional Teacher, Senior Teacher, and Master Teacher. (Tennessee, 1983b) An Apprentice Teacher must complete the requirements to become a Professional Teacher within three to four years; Professional, Senior and Master Teachers must renew their licenses or move up to a higher license every five years. A Professional Teacher's pay and responsibilities would be much the same as they are for teachers now.

A Senior Teacher would receive 30% more pay in return for one extra month of employment to develop curriculum materials, to conduct in-service sessions, and to plan. During the school year a Senior Teacher would supervise and counsel less-experienced teachers and might instruct difficult students and those with special needs; however, at least 90% of their time will be spent as classroom teachers.

Master Teachers would receive 60% more pay in return for two additional months' employment and increased after-school responsibilities. Although contracts would be negotiated individually, Master Teachers would generally be expected to take extensive responsibility for in-service education, for training, counseling, and evaluating Apprentice Teachers, for curriculum leadership, and for organizing and coordinating the work of other teachers. At least 65% of the Master Teacher's time must, however, be spent in classroom teaching.

Senior and Master Teachers could comprise up to 60% of the teacher workforce, would be selected by a special commission composed largely of Master Teachers, and would be funded through State funds, not regular appropriations or local sources. In addition to this plan, Governor Alexander is also developing a "Master Principal" program for administrators. (Tennessee, 1983a)

b. More Flexible Career Ladders

Henrietta Schwartz has suggested that more flexible career ladders be encouraged. "New career ladders for teachers might allow them to remain part-time in the classroom, while having the opportunity to be rewarded professionally and economically for specialized training, study, and

ability in various other educational roles. The teacher might also spend part-time in staff or curriculum development, counseling, educational research, diagnosis and prescription, and so forth." (Schwartz et al., 1983) In addition, dual careers in business or industry and teaching could be more encouraged.

Career flexibility might also be enhanced by removing some existing policy constraints and encouraging regional districts or statewide salary scales so that teachers can move to schools that need their talents without losing pay or benefits.

c. Improving Salary Scales

Another way to provide a better sense of progression within the profession is to restructure the salary scale for teachers. At the present time, teachers can reach the top of the scale in just ten years. This seems an extremely short time and might usefully be even doubled to twenty steps.

In addition, at present, teachers' salaries are rarely as large as entry-level administrators' salaries. In order to keep good teachers in the classroom, they should be paid at least as well as administrators are, especially if a master teacher program is instituted.

d. Accepting Turnover as Inevitable and Making the Most of It

Finally, Steve Weiner has proposed two changes that recognize that some bright people could be attracted to teaching by the prospect of a brief but useful career and that those who stay need the opportunity for more responsibility. (Weiner, 1982) His plan provides, first, for a sabbatical leave after ten years of teaching either to make the transition into a new career outside of education or to prepare for a more responsible role within the schools, and second, after ten years, for the best teachers to undertake special and challenging teaching tasks, assume responsibility for training other teachers, act as liaisons to university scholars, and receive salary increases. He believes that this plan would make better use of youthful altruism, provide acceptable alternatives to burnout, and create a career ladder that would retain good teachers.

3. Giving Teachers More Freedom

If teaching is to be made more of a profession, it requires not only stricter entry and renewal requirements and more opportunities for career development, but also more freedom for teachers to act autonomously in their classrooms. In the past, there has been a movement to "teacher-proof" the school curricula by prescribing what is to be taught, what books are to be used, and what tests are to measure results. In our view, this movement has adversely affected teachers' lives; it makes teaching boring, increases paperwork, and turns a job that could be highly creative into a set of nearly mindless tasks. It is hard to believe that when teachers are this negatively affected, students can be inspired to learn.

The desire to "teacher-proof" the classroom sprang from a fundamental mistrust of teachers' abilities; that mistrust still exists, but if it

has a basis in fact, and we are not convinced that it does here in California, the way to improve performance is to loosen bonds and attract good people into the profession with the possibility of autonomy and the chance to be creative. At the same time, teachers must be willing to do a more conscientious job of policing themselves through peer evaluations.

4. Adapting Teacher Education to These Changes in the Profession

We have left until last the discussion of needed changes in teacher education because decisions about restructuring teacher education must flow from prior decisions about what the teaching profession is to be.

We think it will not be very productive to spend substantial energy tinkering with the present array of programs. Instead, energy should be invested in answering several fundamental questions that flow from the analysis above:

- What kind of teacher training is necessary to foster the view of teacher as a profession? Should it take longer to train a teacher? Certainly teacher education programs need to be made more challenging. How do we ensure that they are also sufficiently practical?

- What role does formal teacher training play in a teacher's career? When in a career should it occur? How often and in what forms should it occur? Is formal training necessary at all, or is on-the-job training enough?

- Are institutions of higher education the best places to train teachers, or are there better alternatives?

- What skills does a teacher, at different levels, really need to develop? Answering this would not only aid in curriculum development, it would give teachers a better sense of who they are, and it could contribute to decisions about whom to bring into the profession.

- How can more practical skills be incorporated into teacher training programs, for example, positive discipline techniques, classroom management skills, maximizing the use of time, teaching to significant objections, knowledge of learning principles, and knowledge of what constitutes a good lesson?

- How best can opportunities to develop supervisorial skills be included in teacher education programs? If teachers are to become master teachers, they need to know how to manage adults as well as children.

- What can we learn about teacher development that will help us design better pre-service and in-service programs? Little is now known about teacher development. If growth and change are to be integral to

the new teaching profession, it will be important to know how adults react to changing environments and what helps them cope or thrive in them.

These questions go to the heart of our present teacher education system and deserve to be seriously addressed. If it is true, as this analysis suggests, that K-12 teaching as presently practiced is not an attractive profession, fundamental changes in teacher education can make an essential early contribution to redesigning and strengthening the profession. It is, however, important that any changes in teacher education be made with the goal of greater professionalization clearly in mind.

C. Concluding Thoughts

It is obvious that there is widespread concern about the K-12 schools and about teachers, both nationally and in California, and that changes are needed. However, change is hard on teachers. Teachers, more than any other professionals, have had reforms imposed on them incessantly in recent years and have, as a result, developed a cynicism about reform and a resistance to change which are formidable, though understandable. If we are to solve the problems of the schools, we must first engage the teaching profession and encourage teachers to be less defensive. We think the best way to do so is to address their concerns directly and improve the attractiveness of the profession. If teachers back school reforms, those reforms will work; if their interests are elsewhere--in coping with daily problems, in fighting for control, or in hunting for a better job--the needed reforms will fail.

Appendix 1

Researchers, Teachers, and Administrators Who Have Been Helpful to the Study

Paul Ammon, University of California, Berkeley

Robert Asnard, California Teachers Association

Myron Atkin, Stanford University

Carol Barnes, California State University, Fullerton

Lisa Barnes, Governor's Office, State of Tennessee

Barbara Bertin, University of California, Irvine

Steve Bossert, Far West Labs, San Francisco

Patrick Bova, National Opinion Research Center, University of Chicago

Edwin Bridges, Stanford University

John Brown, Commission for Teacher Credentialing

James Browne, Consultant, Senate Education Committee

Joanne Capper, State Department of Education

Jay Chambers, Stanford University

Gretchen Cooper, State Teachers' Retirement System

Audrey DeVore, University of California, Irvine

Dan Duke, Lewis and Clark College

Ilona Einowski, Survey Research Center, Berkeley

Donald Erickson, University of California, Los Angeles

Debbie Ford, California Teachers Association

Herb Foreman, California Teachers Association

Austin Frank, University of California, Berkeley

N. L. Gage, Stanford University

Gustavo Getner, Commission on Teacher Credentialing

E. Tom Giugni, Sacramento City Unified School District

Norman Gold, State Department of Education

John Goodlad, University of California, Los Angeles

David Gordon, State Department of Education

Sue Griffiths, Stanford University

James Guthrie, University of California, Berkeley

Larry Harrington, State Department of Education

Irving Hendrick, University of California, Riverside

Harvey Hunt, State Department of Education

Lee Huddy, Commission for Teacher Credentialing

Richard Jamgochian, University of California, Santa Barbara

Judy Johnston, Director of Schenley Teacher Center, Pittsburgh, Pennsylvania

Brenda Jones, Assistant to Senator Diane Watson

Bruce Joyce, San Francisco State University

Charles Kerchner, Claremont Graduate School

Donna Kerr, University of Washington

Michael Kirst, Stanford University

Joann Knowles, Principal, San Lorenzo High School

Kenneth Lane, University of California, Berkeley

Juan Lara, University of California, Los Angeles

Watson M. Laetsch, Vice Chancellor-Undergraduate Affairs, University of California, Berkeley

Larry Lowery, University of California, Berkeley

Jayne Madamba, Assistant to Assemblyman Gary Hart

Vincent J. Madden, State Department of Education

Michael Mc Kibbin, Commission for Teacher Credentialing

Doug Minnis, University of California, Davis

Douglas Mitchell, University of California, Riverside

George Moffet, Los Angeles Unified School District

Beryl Nelson, University of California, Berkeley

Mary Nur, Stanford University

Maria Ortiz, State Department of Education

Sharon Pia, State Department of Education

Andrew Porter, Institute for Research on Teaching, Michigan State University

Claire Quinlan, State Department of Education

Anna Rickert, Stanford University

Herb Salinger, California School Boards Association

Joan Sallee, California Postsecondary Education Commission

Jack Schuster, Claremont Graduate School

Audrey Schwartz, University of Southern California

Henrietta Schwartz, San Francisco State University

Mary Carol Scott, College Entrance Examination Board, New York

Keith Sexton, University Extension, University of California

Glen Scrimger, State Department of Justice

Stanley Shalit, Alameda County Superintendent of Schools Office

Richard Shavelson, Rand, Santa Monica

Lee Shulman, Stanford University

Jack Smart, California State University

Jane Stanbrough, University of California

Mimi Stearns, Stanford Research Institute

Gary Sykes, National Institute of Education, Washington, D.C.

Mare Taagapera, University of California, Irvine

Daniel Taylor, California State University, Bakersfield

Martin Trow, University of California, Berkeley

Anne Upton, State Department of Education/California Pupil Personnel and Guidance Association

Ronnie Veselka, Houston Independent School District, Houston, Texas

William Webster, California State University, Bakersfield

Dan Weiler, Berman and Weiler Associates, Berkeley

Lois Weinberg, National Diffusion Network, Washington, D.C.

John Woods, Associate Vice Chancellor-Resource Management, University of California, San Diego

David Wright, Commission for Teacher Credentialing

Kathleen Yeates, State Department of Education

In addition, 43 teachers from Los Angeles, Orange County, and Alameda County discussed their profession confidentially with us.

Appendix 2

Calculation of Demand Estimates

1. Positions Due to Growth

	Enrollment*	Total FTE Positions Needed (Enrollment÷23.61)	Additional Positions Needed Over Prior Year (Year 2 minus Year 1)
1981		156,232**	
1982	3,967,712	168,052	11,820
1983	3,977,639	168,472	420
1984	4,013,653	169,998	1,526
1985	4,078,534	172,746	2,748
1986	4,155,378	176,001	3,255
1987	4,238,271	179,512	3,511
1988	4,328,653	183,340	3,828
1989	4,445,263	188,279	4,939
1990	4,587,361	194,297	6,018
1991	4,742,023	200,848	6,551
			44,616

* DOF, September, 1982.
** California State Department of Education, Characteristics of Professional Staff in California Public Schools, 1981-82, p. 9.

2. Positions Due to Retirement

Proportion of present teachers who will reach 60 by 1991 = .26 (SDOE, 1982b)

.26 times present population of teachers (156,232) = 40,620.

3. Positions Due to Resignations

	Current Workforce	Current Workforce* Times .08	Current Workforce** Times .06
1982	168,052	13,444	10,083
1983	168,472	13,478	10,108
1984	169,998	13,600	10,200
1985	172,746	13,820	10,365
1986	176,001	14,080	10,560
1987	179,512	14,361	10,771
1988	183,340	14,667	11,000
1989	188,279	15,062	11,297
1990	194,297	15,544	11,658
1991	200,848	16,068	12,051
	Total Separations	144,124	108,093
	Less Retirement	40,620	40,620
	Resignations	103,504	67,473

* Total annual turnover estimate = .08 (NCES, 1979)
** Total annual turnover estimate = .06 (NCES, forthcoming)

4. Positions Due to Changes in Pupil-Teacher Ratios

a. Decrease from 23.61 to 18.44, the national average

	Total FTE Positions Needed: Enrollment (from Section 1 above) Divided by 18.44	Additional Positions Needed Over Prior Year (Year 2 Minus Year 1)
1981	156,232	
1982	215,169	58,937
1983	215,707	538
1984	217,660	1,953
1985	221,179	3,519
1986	225,346	4,167
1987	229,841	4,495
1988	234,743	4,902
1989	241,066	6,323
1990	248,772	7,706
1991	257,160	8,388
		100,928
	Less additional positions due to growth	-44,616
		56,312

b. Increase from 23.61 to 30

	Total FTE Positions Needed: Enrollment (from Section 1 above) Divided by 30	Additional Positions Needed Over Prior Year (Year 2 Minus Year 1)
1981	156,232	
1982	132,257	(23,975)
1983	132,588	331
1984	133,788	1,200
1985	135,951	2,163
1986	138,513	2,562
1987	141,276	2,763
1988	144,288	3,012
1989	148,175	3,887
1990	152,912	4,737
1991	158,067	5,155
		1,835
	Less additional positions due to growth	-44,616
		(42,781)

5. Total Demand

	Pupil-Teacher Ratios		
	at 18.44	at 23.61	at 30
a. At an 8% Separation Rate			
Due to growth	45,000	45,000	45,000
Due to retirement	41,000	41,000	41,000
Due to resignations	104,000	104,000	104,000
Due to p/t changes	56,000	0	(43,000)
Total	246,000	190,000	147,000
Yearly Average	24,600	19,000	14,700
b. At a 6% Separation Rate			
Due to growth	45,000	45,000	45,000
Due to retirement	41,000	41,000	41,000
Due to resignations	67,000	67,000	67,000
Due to p/t changes	56,000	0	(43,000)
Total	198,000	153,000	110,000
Yearly Average	19,800	15,300	11,000

Appendix 3

Model For Projecting Effects of Different Salary Options

In order to provide some estimates of the increase in expenditures that would be required by various kinds of salary increases for teachers, we constructed a model using projections of teachers from 1981 to 1991 from Appendix 2 and estimates of average salaries provided by the California Teachers Association. Using 1981-82 as the base year, we looked at eleven salary steps, estimated the number of teachers in each step, and progressed them through the salary steps using the assumptions of Appendix 2 about separation and hiring. We assumed that separations would be evenly distributed across teachers in the first ten steps, that retirements would affect only the 11th step, and that all hires would be at step 1.

The model assumes the following:

- A total annual turnover of 8%
- Retirements of 4,717 per year
- Enrollment growth as projected by the Department of Finance
- No change in the pupil-teacher ratio of 24.6
- No program alterations that would affect the need for teachers
- A distribution of teachers by years of service as follows:

0-5 years	16.7%
6-10 years	20.6%
11 years or more	62.7%

- An average minimum salary (step 1) of $14,587 for teachers with B.A. plus 30 units (the typical first-credential teacher)
- An average maximum salary of $27,382
- Eleven steps in the salary scale
- Approximately 6.5% between steps
- No inflation; all figures are expressed in 1981-82 dollars

Table 3-1 shows the results of the model's calculations for three Options:

- Option I: no change in salaries
- Option II: a 13.4% increase in starting salaries; but retaining the maximum of $27,382
- Option III: a 13.4% increase in all salaries, retaining the 11 step salary scale

Table 3-2 shows the projection of teachers, 1981-1991.

Table 3-1

Calculation of Salary Options
(in millions of 1981-82 dollars)

Salary Steps	Annual Salary	Option I* No Change		Option II* Raise Minimum by 13.4% (Current Step 3) Maintain Current Ceiling		Option III* Raise All Salaries by 13.4%	
		1981	1991	1981	1991	1981	1991
1	$14,587	$ 76.1	$ 329.9	$ ---	$ ---	$ ---	$ ---
2	15,535	81.1	318.0	---	---	---	---
3	16,545	86.3	293.5	86.3	374.1	86.3	374.1
4	17,620	91.9	263.3	91.9	360.7	91.9	360.7
5	18,766	97.9	241.6	97.9	332.9	97.9	332.9
6	19,985	128.6	213.0	104.3	298.6	104.3	298.6
7	21,285	137.0	191.8	111.1	274.0	111.1	274.0
8	22,668	145.9	150.6	145.9	241.6	145.9	241.6
9	24,141	155.4	109.9	155.4	216.6	155.4	216.6
10	25,711	165.5	387.3	165.5	170.9	165.5	170.9
11	27,382	2,682.4	1,816.1	3,034.9	2,353.1	176.2	124.6
12	29,162	---	---	---	---	187.7	439.2
13	31,057	---	---	---	---	3,042.4	2,059.8
		$3,858.1	$4,315.0	$3,993.2	$4,622.5	$4,364.6	$4,893.0

Table 3-2

Projected Total California Teachers By Salary Steps
1981-1991

Salary Steps	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
1	5,218	25,265	13,898	15,125	16,567	17,338	17,870	18,494	20,003	21,560	22,614
2	5,218	4,365	24,409	13,031	14,238	15,656	15,653	16,424	17,208	18,829	20,469
3	5,218	4,365	3,509	23,542	12,144	13,327	13,971	14,207	15,138	16,034	17,738
4	5,218	4,365	3,509	2,642	22,655	11,233	11,642	12,525	12,921	13,964	14,943
5	5,218	4,365	3,509	2,642	1,755	21,744	9,548	10,196	11,239	11,747	12,873
6	6,436	4,365	3,509	2,642	1,755	844	20,059	8,102	8,910	10,065	10,656
7	6,436	5,583	3,509	2,642	1,755	844	844	18,613	6,816	7,736	8,974
8	6,436	5,583	4,727	2,642	1,755	844	844	844	17,327	5,642	6,645
9	6,436	5,583	4,727	3,860	1,755	844	844	844	844	16,153	4,551
10	6,436	5,583	4,727	3,860	2,973	844	844	844	844	844	15,062
11	97,962	98,630	98,439	97,370	95,394	92,483	87,393	82,247	77,029	71,723	66,323
Total Teachers	156,232	168,052	168,472	169,998	172,746	176,001	179,512	183,340	188,279	194,297	200,848

Appendix 4

Projections of Math and Science and Bilingual Teachers 1981-1991

A. Math and Science Teachers

Calculations of demand for math and science teachers followed the same assumptions and procedures described for all teachers in Appendix 3. The only changes were:

-- distribution of teachers by years of service:

	Math Teachers	Science Teachers
1-5 years	13.9%	13.4%
6-10 years	19.6%	20.2%
11 years or more	66.5%	66.4%

-- turnover rate:

Based on Guthrie and Zusman's analysis of the shortages of math and science teachers in California, we estimated the math and science teacher turnover rate to be 11.5% instead of the normal 8% turnover rate for the rest of the California teachers. This higher turnover rate translated into a teacher shortage of 506 statewide. We added 506 teachers to our salary differential model for 1982 on the assumption that a $1,500 stipend would be enough to alleviate the shortage in 1982 and that after the shortage was alleviated, continuing stipends would return the math/science turnover rate to the statewide average of 8%.

B. Bilingual Teachers

The State Department of Education projects demand for bilingual teachers in California only one year ahead. Therefore, the only way we could estimate the demand for 1991 was to use limited and incomplete data. Our methodology was as follows:

1. LEP Enrollment Projection

In order to arrive at the total number of limited-English-proficient (LEP) pupils for 1991, we first looked at the proportion of Spanish-speaking LEP students to the total for the years 1979-80 to 1982-83. This averaged 76%, varying from a low of 74.6% in 1982-83 to a high of 78.9% in 1979-80. Because Spanish-speaking students comprised the large majority of the LEP students, we decided to use Hispanic population projections as our basic data for LEP enrollments.

The only population projection by major age groups for Hispanics is found in the Center for Continuing Study of the California Economy's Projections of Hispanic Population for California, 1982-2000. The 0-14 age group in 1985 is estimated to be in the range of 1,762,400 to 1,840,400. We can assume that this population is the K-12 population in 1991, with a few caveats:

(1) That, we are overestimating a bit because, while everyone in the cohort will have reached kindergarten by 1991, the 13 and 14-year olds will have completed their 12th grades by then; and

(2) we must assume that everyone in this cohort will be attending public schools and that no attrition between grades will occur. (This is a problematic assumption because there has historically been a pattern of substantial attrition of Hispanic students between grades 10 and 12.)

Nevertheless, despite the limitations, it is the best data we have. From the actual enrollments for 1979-80 and 1981-82, we know that Spanish LEP enrollments averaged 29.4% of total Hispanic enrollments. Multiplying this percentage times the conservative lower estimate of the Hispanic K-12 population produces an estimate of Hispanic LEP's as follows:

$$\begin{array}{r} 1{,}762{,}400 \\ \times \quad 29.4\% \\ \hline 518{,}146 \end{array}$$

No projections of other LEP populations (e.g., Cantonese, Vietnamese, Korean, Pilipino) are available. We assumed, for lack of anything better, that there would be no change in their numbers; in reality there may well be a decrease. Adding the average number of non-Hispanic LEP's served in the past four years to our Hispanic projection produces an estimate of total LEP students as follows:

Non-Hispanic LEP's	94,257
Hispanic LEP's	518,146
Total LEP's, 1991	612,403

2. Bilingual Teacher Demand Projection

SDOE projected for 1981-82 a demand for 14,585 to 17,478 teachers to teach 373,069 LEP students. Therefore, assuming the same teacher-pupil ratio, we can project the demand for bilingual teachers in 1991 as follows:

$$\frac{14{,}585}{373{,}069} = \frac{x}{612{,}403}$$

$x = 23{,}942$ Bilingual Teachers

Appendix 5

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Appendix 6

Unpublished Data Sources

CTA	California Teachers Association Salary Schedules
DOF	Department of Finance, Population Research Unit Public School Enrollment Projections, September 1982
Opinion Research	Opinion Research of California, July 1982 Poll Conducted for the Association of California School Administrators and the California School Boards Association
SDOE	State Department of Education CBEDS--California Basic Educational Data System Estimates of Bilingual Teacher Demand, 1982-83, Reports 82-4B and 82-4C.
STRS	State Teachers Retirement System
UC	University of California, Systemwide Personnel Office Distribution of Salary Comparison Charts

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Improving the Attractiveness of the K—12 Teaching Profession is one of approximately 500 publications that are available from the California State Department of Education. Some of the more recent publications or those most widely used are the following:

American Indian Education Handbook (1982)	$3.50
Bilingual Program, Policy, and Assessment Issues (1980)	3.25
California Private School Directory	9.00
California Public School Directory	12.50
California Public Schools Selected Statistics	1.50
California School Accounting Manual (1981)	2.50
California Schools Beyond Serrano (1979)	.85
California's Demonstration Programs in Reading and Mathematics (1980)	2.00
Curriculum Design for Parenthood Education (1982)	4.00
Discussion Guide for the California School Improvement Program (1978)	1.50*
District Master Plan for School Improvement (1979)	1.50
Education of Gifted and Talented Pupils (1979)	2.50
Establishing School Site Councils: The California School Improvement Program (1977)	1.50*
Foreign Language Framework for California Public Schools (1980)	2.50
Guide to School and Community Action (1981)	1.75
Guidelines and Procedures for Meeting the Specialized Health Care Needs of Students (1980)	2.50
Guidelines for Proficiency Tests (1982)	2.00
Guidelines for School-Based Alcohol and Drug Abuse Programs (1981)	1.00
Handbook for Planning an Effective Mathematics Program (1982)	2.00
Handbook for Planning an Effective Reading Program (1983)	1.50
Handbook for Planning an Effective Writing Program (1983)	2.50
History—Social Science Framework for California Public Schools (1981)	2.25
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Improving Writing in California Schools: Problems and Solutions (1983)	2.00
Mathematics Framework for California Public Schools, with 1980 Addendum (1982)	2.00
Monograph on Staff Development (1980)	1.50
New Era in Special Education: California's Master Plan in Action (1980)	2.00
Pedestrian Rules of the Road in California—Primary Edition (1980)	1.50
Physical Performance Test for California, Revised Edition (1982)	1.50
Planning for Multicultural Education as a Part of School Improvement (1979)	1.25
Planning Handbook (1978)	1.50
Proficiency Assessment in California: A Status Report (1980)	2.00
Proficiency Skill Development Kit (1980)	7.50
Putting It Together with Parents (1979)	.85*
Raising Expectations: Model Graduation Requirements (1983)	2.75
Reading Framework for California Public Schools (1980)	1.75
Relationship Between Nutrition and Student Achievement, Behavior, and Health (1980)	4.00
Science Education for the 1980s (1982)	2.00
Science Framework for California Public Schools (1978)	1.65
School Improvement: Making California Education Better (brochure) (1982)	NC
Statement on Competencies in English and Mathematics Expected of Entering Freshmen (1982)	2.50†
Student Achievement in California Schools	2.00
Teaching About Sexually Transmitted Diseases (1980)	1.65
Toward More Human Schools (1981)	1.75
Visual and Performing Arts Framework for California Public Schools (1982)	3.25

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